

# The Journal of the Michigan State Medical Society

PUBLISHED UNDER THE DIRECTION OF THE COUNCIL

VOL. III

DETROIT, MICHIGAN, NOVEMBER, 1904

NO. 11

## Original Articles

### CHORIO-EPITHELIOMA MALIGNUM— REPORT OF A CASE.\*

WM. F. METCALF and H. E. SAFFORD,  
Detroit.

Mrs. C., age 31 years. A remote history of tuberculosis on the maternal side. Menstruation began at fourteen; was regular, normal in amount, and painless, until July, 1902. In 1898 she was thrown from her bicycle, the handle tearing the perineum. This laceration was repaired and the patient was in bed for three weeks. She married February 26th, 1902. At the time for normal menstruation, July 5th, she flowed excessively. July 13th there was profuse flowing during the night, and products of conception were expelled. July 27th profuse flowing came on suddenly with the expulsion of a blood clot. During the following four days the temperature ranged from 101° to 103.5°. The os uteri was found patulous and curettement was performed by her mother, a practicing physician. The patient remained in bed about three weeks and made a fair recovery.

Menstruation began August 25th, was normal in quantity and duration and was painless. She menstruated normally in September and October; she failed to menstruate in November, suffered morning nausea, and thought herself pregnant. She flowed freely and continuously December 1st and 2nd. After this her health improved and she added to her weight. She failed to menstruate in January and February and again thought herself pregnant. March 8th she had a chill followed by sore throat; temperature 101°. On the afternoon of March 12th she began to flow so profusely that by 4 P. M. she was reduced to the point of fainting. Strong expulsive pains now began and continued until 10 P. M., when a piece of mole tissue four inches long and as wide as two fingers was expelled and a similar piece lodged in the cervix. This was followed by exhaustion and there were no more uterine contractions. She slept until morning. On March 14th her mother curetted the uterus, removing pieces of tissue together equaling in size a man's fist and composed of cysts with

\*Read before the Section of Obstetrics and Gynecology at the annual meeting of the Michigan State Medical Society at Grand Rapids, May 25, 1904, and approved for publication by the Committee on Publication of the Council.

pedicle attachment, varying in size from a pin-head to that of the end of the little finger. There were hundreds of these cysts embedded in a fibrinous mass. Bright red blood suffused the mole as it was removed. There was no odor. The uterus was about the size of one four months advanced in pregnancy. Her temperature was  $101^{\circ}$  to  $103^{\circ}$ .

Active flowing continued. March 21st curetting was repeated and more than a handful of tissue removed. After this the temperature became normal; she was permitted to get up soon and for about a week went down stairs. Then began occasional profuse gushings of blood, with intervals of hours between, and she began to lose color rapidly. On the morning of April 6th, she was curetted again. Profuse hemorrhage during curettement compelled immediate packing of the uterine cavity. Dr. Metcalf was first called to the case on the evening of the same day and from the history was led to make a diagnosis of chorio-epithelioma and advised careful microscopical examination of the tissues previously removed. The next morning a stream of blood followed the removal of the packing from the uterine cavity, and a strong necrotic odor pervaded the room. A report upon the tissues examined at the clinical laboratory gave support to his suspicions of malignancy. Blood-examination showed the hemoglobin reduced to 50 per cent. The patient was at once sent to Harper Hospital where the following morning Dr. Metcalf performed an abdominal hysterectomy.

Her recovery was uninterrupted and the improvement has continued. She says that she has attended all her household duties since five months after the operation. At present, nearly fourteen

months after operation, she is apparently enjoying perfect health.

Chorio-epithelioma is a neoplasm, varying in malignancy and originating from chorionic epithelium or its parent trophoblast. It forms a distinct class, apparently differing from carcinomata and sarcomata. It is generally related to a more or less recent pregnancy, but some investigators seem to have demonstrated that the characteristic tissue may be found independently, as for instance in certain teratomata of the ovary or even in corresponding tumors of the testis. Of the theories to account for the occurrence of such tissue in these tumors it is foreign to our purpose to make mention. It is worthy of notice in passing that here lies an interesting bone of contention among the pathologists.

The attention of scientists was called to this kind of new growth about fifteen years ago. After some controversy among those who were actively working upon the subject, the London Obstetrical Society in 1896 appointed a commission to settle, if possible, the classification of these tumors. The verdict of the commission was that they were nothing but sarcomata of the uterus and it practically denied that they had any necessary relation to pregnancy. The course of scientific thought has ever since been running farther away from the dictum thus laid down.

In the General Hospital in Vienna from February, 1901, to August, 1902, there were found in 2700 autopsies seven cases of this condition. Marchand in 1898 had applied the term chorio-epithelioma to it. Veit in 1901 published an article, in which he attempted to account for the condition on the theory of their springing from the deported fragments of chorionic tissue escaping into the maternal blood-vessels.

This fact has attained to a quite general acceptance, but since the deported fragments are observed in normal, as well as in pathological conditions, his theory is held insufficient. Such fragments are usually absorbed in the maternal tissues but it is possible to conceive that a tumor might arise in a more or less distant part if the normal degeneration were not undergone. That there is metastasis by way of the blood-vessels in the presence of the already developed malignant process there can be little doubt.

It is safe to say that today the work of Marchand upon the pathology of these growths is given the greatest weight, although the English commission did much to delay its recognition. The previous work of Langhans upon the histology of the chorion and especially the work of Peters and others upon the early stages of the development of the ovum, during its period of implantation, have given the ideas of Marchand an ample support. By this view as latterly held by Marchand, the neoplasm is made up entirely of tissue arising from the foetal ectoblast instead of the maternal mesoblast, as the English commission would have had it. This foetal ectoblast, or trophoblast, gives rise in the developed chorion to the layer of what are known as Langhans' cells. These lie upon the stroma of the villus and probably represent the most highly vitalized tissue in the chorion. From them, by a process of differentiation, it seems that the outer syncytial covering of the villus is derived. These so-called cells of Langhans are then the ones which we find as the invaders of the uterine structures and the component cells of the metastases. In both primary growth and metastases, the syncytial derivatives, cor-

responding to those described as in the villus covering, are found.

The diagnosis in many cases must be difficult. Even the microscopic determination can not be taken as absolute, since there is such a variety of appearances within the normal. It must first be recognized that the tissue from which this growth develops is, according to the accepted view of Peters, essentially infiltrating, and even within normal limits to a degree malignant, from the maternal standpoint. In other words the primitive trophoblast in its normal activity and the derivative Langhans' layer in the condition of chorio-epithelioma malignum are, according to this view, similar in vital characters as well as in morphology; the real difference between the two arising in the absence of a purpose in the vital activity of the latter, as is true of the growth of any malignant neoplasm. This difference, it will readily be understood, does not strikingly manifest itself in the lower grades of malignancy. This is not saying however that the microscopic examination is not useful and even imperative. The observations thus made should, in the light of the clinical features, lead to a fairly positive diagnosis in most cases. In the simple hydatidiform mole the overgrowth of the stroma of the villi and its subsequent degeneration, so as to form the characteristic little pedicled cysts present in such numbers are attended by a moderate overgrowth of the chorionic epithelium. This evidently was the condition in the earlier part of the course of the case we present. As malignant characters are assumed by the new growth, the hyperplasia of the stroma is overshadowed by that of the epithelial cells, and the striking features become the num-

ber of cells of Langhans, syncytial giant-cells, and deep-staining "syncytial masses" in groups or scattered, upon the surface or more or less deeply infiltrating the uterine structures. In those cases where the metastases are accessible for examination, the finding of the chorio-epithelial cells would leave usually no doubt of the character and source of the primary trouble.



CHORIO-EPITHELIOMA MALIGNUM  
Infiltrating Langhans' cells.  
Syncytial giant-cell.  
Syncytial masses, with deeply staining nuclei.

In order that the pathological examination may be made at the best advantage, all the tissues obtained should be preserved and placed as early as possible in the hands of the microscopist.

In any case where a hydatidiform mole has been passed, it must be looked upon for a considerable time as potentially one of the malignant type. A good routine plan that has been suggested for such cases is to watch them carefully for a period of two weeks when, no signs of a malignant process being apparent, a thorough curetting of the uterus is performed and a careful search for actively infiltrating proliferation made. This delay al-

lows time for the absorption of those remnants of chorionic tissue which, though benign, might earlier cloud the diagnosis.

In the event of symptoms of an already developed malignancy, irregularly repeated profuse hemorrhages and rapidly developing anæmia, there is no time to be lost. Disregard the dangers of hemorrhage to such an extent as to be able to get a specimen for examination, pack, and get the earliest report possible from the laboratory. In no class of cases would the value of the freezing microtome be of greater service, permitting your examination while you wait.

In considering the diagnosis from the clinical side, we may note that the average age of these patients falls at the time of greatest sexual activity. It is given by Teacher, in a study of nearly two hundred cases, as 33 years, an average differing from that of either carcinoma or sarcoma. It is true that a number follow delivery at term yet the vast majority follow abnormal pregnancies. The histories show preceding good health in many cases. Miscarriage followed by the formation of a hydatidiform mole is always a suspicious train of events. Statistics show that from 10 to 16 per cent. of cases of mole are followed by malignant manifestations, and about 50 per cent. of cases of chorio-epithelioma follow hydatidiform mole. Sudden severe hemorrhages, irregularly recurring, are the ordinary picture, but in some cases this has not figured conspicuously. There is apt to be an offensive discharge between the recurring hemorrhages. Rigors with more or less fever are common. Anæmia and cachexia attend the appearance of the malignancy and progress rapidly. Cough or hemoptysis in any such case should arouse the sus-



picion of a pulmonary metastasis and is a thing which Teacher believes should be borne in mind in attending any recently delivered woman. Failure to be relieved of hemorrhage or to take on a general improvement after curettement would bear a serious significance.

Even with radical operation the general prognosis is bad; but that it is not so hopeless as some have been led to believe is evidenced by the peculiar, unaccountable course of some cases reported.

An early hysterectomy will save a large proportion of those in which a positive diagnosis of malignancy can be made and confirmed. Cases are on record in which, even after the development of metastasis, the removal of the metastatic growth and the emptying of the uterus were followed by an apparently permanent return to health. On the other hand it has happened that the uterus showed no sign of involvement in the malignant process, while the secondary growths developing by metastasis a few months after pregnancy were rapidly fatal. And again there are cases in which the primary growth has been removed even after metastasis was established and recovery has followed.

Of Teacher's 188 cases collected, 99 had been subjected to radical operation and, of these 99, there were 63.6 per cent. of recoveries, or 34.2 per cent. of the whole number of cases. Two-thirds of the successful operations were performed within three months of the appearance of symptoms.

We may consequently conclude that early operation and removal of the primary growth is the only safe treatment and that metastasis is not a contra-indication to operation.

#### PATHOLOGICAL REPORT.

I. Uterine curettings from case of Mrs. C., taken March 14th, but not coming to our hands until April 10th, 1903. A loose mass of tissue chiefly made up of small cysts, some hanging by a pedicle attachment, some embedded in a fibrinous mass, each more or less transparent and collapsing under the touch. On section these cysts are found to be in various stages of degeneration, from the small growing villus, with comparatively healthy stroma covered with syncytium to a considerable thickness, to the completely formed cyst in which the stroma has entirely disappeared except around the periphery and the syncytium has all but entirely disappeared. In all villi in which the stroma has begun to soften and become transparent at the center, the syncytium shows the absence of the round cells of Langhans. The "syncytial masses," with their heavily staining nuclei, remain often as the most enduring among the degenerating tissues, and a thin layer of syncytium is usually to be found about even the completely formed cyst. The specimen is the tissue of a hydatidiform mole. From this alone the case could not be declared malignant. (The curettings of April 6th were reported to us as malignant.)

II. Uterus and appendages removed April 8th, 1903. Uterus was 11 centimeters, by 6.5 centimeters, by 5.5 centimeters in size; and when received was packed with gauze, which, being removed on opening the uterus, left a foul-smelling, dark grayish-brown surface on the posterior and superior walls of the canal extending around upon the anterior surface somewhat more to the right. On cutting into the uterine tissues, they

were found soft and spongy in consistency over the above described area for a depth of from 5 millimeters to 10 millimeters, but elsewhere and at greater depth the gross appearance and consistency more nearly approximated the normal. Microscopic examination showed a marked infiltration of the uterine tissues by the cells of Langhans extending well into the musculature. At the surface were left remnants of villi of the mole with their stroma in various stages of degeneration, but the epithelium was in active state of proliferation. At the surface of these villi were seen perfect transitions from the cells of Langhans to the mature syncytium. Wandering among the uterine tissues beneath the surface were the characteristic syncytial masses and giant-cells.

This is undoubtedly a chorio-epithelioma malignum.

The photographic work was done by P. M. Hickey, Detroit.

#### BIBLIOGRAPHY.

Muenzer: *Centralbl. f. allg. Path. u. path. Anat.*, 1902; vol. xiii, Nos. 6 and 7.

Peters: *Die Einbettung des menschlichen Eies*, 1899.

Wilms: *Mischgeschwuelste*, 1902.

Bonnet: *Zur Aetiologie der Embriome*; *Monatsschr. f. Geb. u. Gyn.*, 1901.

Veit: *Deportation der Chorionzotten*; *Zeitsch. f. Geb. u. Gyn.*, Bd. 44 h. 3.

Teacher: *On Chorionepithelioma and the Occurrence of Chorionepitheliomatous and Hydatidiform Mole-like Structure in Teratomata*; *Jour. Obst. and Gyn. of the Brit. Emp.*, 1903, vol. iv, Nos. 1 and 2.

Schlagenhauser: *Ueber das Vorkommen chorionepithelioma und traubenmolenartiger Wucherungen in Teratomen*; *Wien. Klin. Woch.*, 1902, vol. xv, No. 22.

Solowij und Kryszkowske: *Beitr. z. Chori-onepith. u. Blasenmolenfrage*; *Monats. f. Geb. u. Gyn.*, Bd. xii, 15.

Findley: *Diag. of Dis. of Women*; Lea Bros. & Co., Phila. and N. Y., 1903.

Marchand: *Zeits. f. Geb. u. Gyn.*, Bdr. xxxii, xxxix, u. xlvii.

Neumann: *Wien Klin. Woch.*, 1896, No. 36 u. 1898, No. 51.

#### DISCUSSION.

**B. R. Schenck**, Detroit: It seems to me that this paper of Dr. Metcalf's, which is on an important subject, should not go by without some discussion. And yet cases of deciduoma malignum or chori-epithelioma, as you may wish to call them, are so exceedingly rare that in general practice we do not meet many of them. I dare say that but few of us will ever have the opportunity of seeing a case, and if we do we certainly will not see many. Even in the large obstetrical clinics in Europe the cases are rare. In this country I do not know what the statistics are, but in the Gynecological Clinic of Johns Hopkins, where there have been about 11,000 indoor cases since the opening of the hospital, there has been but one case of deciduoma malignum, and as this case brings out a point upon which Dr. Metcalf has touched I would like to refer to it.

The patient was a large, healthy woman. In August, 1902, she was seen by her physician in Western Maryland, and was supposed to be at that time 2½ months pregnant and to be threatened with abortion. With the usual treatment for abortion, the bleeding ceased and she went on for a couple of months perfectly well. He was called one night to find her—along in the month of October—with a profuse flooding and in a dangerous condition. He made an examination at that time and found that the uterus, much to his surprise, was the size of a seven or eight months' pregnancy. Supposing then that he had a case of placenta previa he did accouchment forcée. He delivered what was apparently, from his description, an hydatidiform mole. The patient did very well until about the fourth week when she began to have uterine bleeding. The doctor did a curettement, but despite this the hemorrhage went on, and he brought her to the hospital some time in November, about seven weeks after the delivery of what was taken to be the mole. On admission to the hospital she was in an exceedingly bad condition. The second day the temperature was 105°, pulse never less than 132. The blood count showed but 20 per cent. of hemoglobin, and a corresponding number of red blood corpuscles. On the second day, as the bleeding was quite profuse, I did a curettement, packed the uterus, with the idea of putting her in bed and building her up before doing a radical operation. The scrapings

which were examined at that time were apparently those of a chorio-epithelioma. She did not build up and was going down constantly, so that despite her bad condition, an abdominal hysterectomy was done, which she stood well, although her convalescence was slow. She left the hospital in fair condition and has since continued well.

The point I wish to make is illustrated by this case. The examination of the specimen showed masses of syncytial tissue imbedded in the uterine muscle, but these syncytial cells did not show, as we know they usually do in cases of chori-epithelioma, a marked tendency towards proliferation. There were really none of the rabid appearances that we usually have in those cases, so the case was rather puzzling. A work has recently appeared from Marchand's laboratory in Leipsig, in which the author points out that we are no longer to regard deciduoma malignum as necessarily malignant, for we have all grades of

malignancy, from the most benign and mild to the most malignant. This case which I have just related, should probably be classed as a destroying mole. The author gives a classification of deciduoma which is rather a new idea, as we have heretofore looked upon the condition as a pathological entity.

The gradations in regard to malignancy are much the same as the gradations in the virulence of the colon and typhoid group of organisms. On one end of the line we have the innocent colon bacilli, on the other the virulent typhoid. So in regard to these cases, the benign mole stands at one end and the malignant deciduoma at the other.

**W. F. Metcalf**, Detroit: I have nothing further to say other than that the symptoms are so marked that really no case of deciduoma malignum or chori-epithelioma should be overlooked by any one who has given the subject thought.

### GENERAL TIC—WITH REPORT OF A CASE.\*

C. C. WALLIN,  
Grand Rapids.

The word tic means literally a twitching, and has been applied to a group of convulsive disorders which present as their chief symptom spasmodic contractions of various muscles or groups of muscles. This common symptom is the expression of diverse pathological conditions. So also is there a varying degree of involvement of the higher and lower portions of the central nervous system. Joseph Collins of New York, classifies tics as follows:

"Primarily, (1) Senile (acquired) tic.

"(2) Early tic, which may be divided

into two varieties, viz: (a) degenerative, and (b) acquired.

"Early tic, degenerative or acquired, may be divided into two classes, viz: (1) motor tic. (a) localized tic. (b) generalized tic.

"(2) Psychomotor tic, divided into (a) tic which is a response to a compulsory idea, or obsession, and (b) tic caused by a co-ordinated movement, associated with intellectual or emotional externalization, orderly or disorderly."

\*Read before the Section on General Medicine at the annual meeting of the Michigan State Medical Society at Grand Rapids, May 26, 1904, and approved for publication by the Committee on Publication of the Council.

Meige and Feindel, in their recent work "*les Tics et leur Traitment*," follow the usage of Brissaud and Charcot, designating as spasms those convulsive disorders which are due to a peripheral irritation, in the production of which the bulbospinal arch alone is involved; to be a tic

the cerebral cortex also must participate in the affection.

For descriptive purposes tics are classified as to their location. Thus we have fronto-orbicular tics, nasal tics, diaphragmatic tics, etc.

That form of tic which is herein chiefly discussed is one of those included under the last group of Dr. Collins' arrangement and likewise may properly be called a tic according to the conception of the French authors quoted.

Tic General, also known as *Maladie Des Tics Convulsif*, *Maladie Des Tics Impulsif*, Gilles de la Tourettes disease, *Myospasia impulsiva*, is a rare psychomotor neurosis. Characterized by (1) twitchings of the facial muscles; (2) systematic movements repeating themselves in the same manner; (3) echolalia and coprolalia, also echokinesis and occasionally (4) imperative or fixed ideas.

As a better clinical description of the disease cannot be found I insert the following from Oppenheim:

"The disease generally occurs in children between seven and fifteen years of age, and who are neuropathic by heredity . . . a sudden emotion, a trauma, or an infectious disease is the most common exciting cause of the attack.

"The first symptom noticed is generally a twitching of the facial muscles, particularly a blinking of the eyes, drawing up of their corners, distortion of the mouth, or a rapid opening and closing of it, etc. Twitching of the muscles of the neck come in afterwards. In its further course, often only after years, movements occur which give the impression that they are *for a definite purpose*, or to produce an effect, or are merely the result of *habit*. The patient grasps his nose, pulls his hair,

strokes his chin, throws his head to one side, claps hands, stamps his feet, catches imaginary insects, imitates spitting, dances, hops or runs around, and the like.

"These movements are repeated in a stereotyped manner. The patient is forced anew to bring his muscles into the same action, and originally judicious and phynologic movements become pathologic. Though all muscular regions may be affected, the face, neck, and upper extremities are particularly liable to be affected.

"Synergetical muscular action is rare, as are also single movements. It is generally a co-ordinated tic. They differ from voluntary movements not only through their seeming absence of purpose and constant repetition, but also by the short, rapid and forcible nature of the muscular action.

"Articulation, phonation and respiration are generally involved; the patient is forced to make inarticulate sounds or even words. It is often a simple smacking of the lips or a chuckling, more often imitation of the voices of animals, sometimes senseless words or more often ugly and obscene words (coprolalia), or references of a sexual nature. The impulse to repeat words or sounds (echolalia) or to imitate movements (echokinesis) is rarely present . . . the intelligence usually remains intact . . . the movements may be temporarily inhibited by will power . . . diversion of the attention and voluntary movements usually quiet the tic."

The essential etiology of this affection is a degenerate condition of the nervous system. The word degenerate is here used in its biologic rather than its pathologic sense. The condition is more frequently a manifestation of a general neurotic condition in the ancestry than of a direct inheritance of the disease. In other



words, basic embryological conditions are such that there is a partial failure of development of the central nervous system. Not only is the inhibitory function of the higher centers weak, but the efferent motor centers are lacking in tone and unduly irritable. Thus, though certain spasmodic actions not set in motion by the will, as for instance, licking the lips with the tongue, may be temporarily stilled by the will, they shortly commence anew. On the other hand, certain actions initiated voluntarily run on in a spasmodic way, like a piece of machinery which has suddenly lost its fly wheel and subside only when the effect of the original stimulus is exhausted.

The direct cause of the appearance of the symptoms is usually a prolonged illness, generally of infectious character. Sometimes trauma or emotional shock may be the immediate agent of its manifestation. Occasionally cases develop in which no history of either illness or shock can be obtained. A certain proportion of these are unquestionably due solely to a progressive degeneration of the nervous centers but I am convinced that the development of certain cases in which no history of any extraneous excitant can be obtained, is at least hastened, if not entirely caused, by the prolonged action of overlooked peripheral irritations, such as a redundant or adherent prepuce, intestinal worms, naso-pharyngeal obstructions, etc., upon an already unstable, nervous organism.

The diagnosis of tic in its various forms, as well as a proper conception of its nature, has been and to a large extent is still obscured by what Dr. Collins calls "that dreadful phrase, 'a kind of chorea.'" Chorea sometimes accompa-

nies the tics but patho-genetically as well as symptomatically the diseases may be sharply differentiated. The chorea of Sydenham has a different pathology located in the gray matter of the cortex, meninges basal ganglia and cord induced by vascular changes. Huntington's chorea is directly hereditary, rarely begins before the age of thirty, is attended by progressive mental deterioration and shows post-mortem degenerative conditions of the cortex.

In its clinical manifestation chorea is characterized by unsystematic and irregular twitchings, the movements are not co-ordinated, and are generally made worse by voluntary efforts. The echolalia and coprolalia of general tic are almost pathognomonic and never found in cases of pure chorea.

Hysterical spasms come on suddenly, may often be controlled by suggestion, and are usually accompanied by other stigmata of hysteria. Here also echolalia and coprolalia are usually absent.

Early in its course general tic may be mistaken for ordinary convulsive tic, though the latter is usually unilateral, and is not progressive.

General tic manifesting itself first in the muscles of phonation and articulation has been mistaken for tongue-tie, and the phrenum lingulae incised for its cure.

Report of case. Patient, R. L., age 5 years. Family history on mother's side negative. Father has a marked alcoholic history, having in the past been a hard drinker and more than once been on the verge of delirium tremens. At one time manifested such unreasoning jealousy of his wife that a brief separation occurred.

Some years ago a son seven years of age died from some convulsive illness

said to be "water on the brain." Both the parents are fond of their children, but being of a somewhat excitable temperament do not create the best environment for the patient.

Patient himself is well nourished, bright, and apparently normal. Delivery was instrumental and prolonged. During the first year of his life he developed normally and at the age of one was beginning to walk, when he contracted whooping cough. This hung on most of the second year, and was accompanied by severe gastro-intestinal derangement. During this period it was noticed that he was backward about talking. About the end of the second year he recovered from the whooping cough but was unable to sit alone, owing to weakened condition. At the age of  $2\frac{1}{2}$  years the frenum lingulæ was incised to relieve him from tongue-tie. No improvement resulted. From that time until last September practically the same condition obtained, save that his father noticed that he did not handle his limbs with the freedom of a normal child. In September last the patient first came under my observation, not however, as a patient. He then resided in my neighborhood and I had some opportunity of observing him as he played about with the children. The most striking symptom he presented was the peculiar spasmodic character of his articulation. He seemed to have but little control over this function, and whenever he would attempt to speak a jumble of words, many of which were unintelligible, would pour forth. Again, if he did get a long word started properly he seemed unable to form certain sounds, chiefly the consonants, or to change from one syllable to another. Thus in attempting to say medicine, he

would say "me-me-me," repeating the first syllable rapidly and being unable to form the last two. In attempting to say automobile, he would say "auto-mo-bi-bi-bi-bi." At this time he manifested also spasms of the facial musculature, involving the fronto-orbicular and the mimetic muscles so that with a peculiar scowling and blinking he would draw his mouth into a broad grin. This gave him an appearance of being mentally deficient. Co-ordination in the upper and lower extremities was somewhat below par and his movements were characterized by a peculiar though not excessive awkwardness. None of them, however, were of that tremulous nature characterized as choreiform. Another interesting manifestation was the way in which he would at times imitate my actions when about the stable. Thus he would take a cloth, follow my movements when I was cleaning my automobile and would pick up a broom to sweep the floor if I did so. At first I attributed this to the natural imitative instinct of a child. Prolonged observation convinced me, however, that it was a morbid manifestation. He would repeat the same action over and over again. Thus if he bent down to pick up something and I sharply told him not to, he would obediently desist for the moment but would immediately repeat the action. This also I at first attributed to childish wilfulness, but on further study, taken in connection with the above described symptoms, became convinced that it was another manifestation of "echokinesis."

As cold weather came on, I lost sight of the case until February 26th, when I was requested by the mother to see him professionally. About three weeks previous he had developed a spasmodic con-

traction of the muscles of the neck and left shoulder; in other words, a spasmodic wry neck. He had been wearing a new sweater with a high collar when this began, and his parents first thought that this irritated him. Removal of this supposed cause brought no amelioration of the symptom, which later alternated with a rotary spasm. These spasms were not incessant, but occurred at intervals of one to three minutes for one-half hour, then there might be a period of quiet, followed by a few minutes of almost incessant activity, though not at any time violent. Patient was also suffering from incontinence of urine and was continually scratching his anus.

Physical examination showed the child to be well nourished and presenting no gross malformation. Knee and elbow reflexes normal. When asked to put out his tongue, could not control it; would put it out and it would be drawn back again and twisted from side to side. The upper incisors showed a notching, and all the teeth a tendency to decay, such as is frequently seen in children whose nutrition has been interfered with or whose development is below par. The prepuce was elongated and adherent over most of the glans and the skin about the anus red and irritated. The child had been indulged in sweets though not excessively, was irregular in his habits of eating and constipated.

Circumcision, cleaning of the small bowel with santonin and calomel and irrigation of the large bowel with quassia, remedied immediately the urinary incontinence and the anal irritation. Regulation of the diet controlled the evacuations and a prompt and decided remission in the spasms occurred.

A course of mental and physical hygiene was instituted. For about a month no spasms of the neck muscles were manifested, save once or twice under stress of excitement. Phonation and articulation were somewhat improved and several long words which previously could not be pronounced were properly enunciated, e. g., "automobile."

During this period the first typical manifestation of echolalia was observed. The patient would go about the house repeating again what was said to him. Involvement of the lower extremities was also observed. Occasionally when excited one or other of the lower limbs would be seized with a violent though short stamping spasm. Somewhat later the tongue was particularly affected and the child was continually licking his lips. At about the end of the second month's treatment he was free from all spasms and his phonation still further improved. Then he was sent to stay with friends for a week during the maple sugar season. At the end of his visit his neck was jerking again, he was continually protruding his tongue and licking his lips, and while at play alone would constantly hum and make peculiar noises. Cleansing of the gastrointestinal tract and regulation of the diet again did away with the neck spasms.

Later I twice observed a diaphragmatic tic, initiated by excitement and laughter. At the time of writing the grosser spasms, those of the neck and limbs, are in abeyance, but how long they will remain so it is difficult to say, owing to the continual tendency of the parents to become lax in their care.

I have gone into the description of this case somewhat in detail for the reason that it has been an unusually characteris-

tic example of tic involving most of the muscles of the body, and further because its course emphasizes the necessity of continual patient treatment.

This affection may be therapeutically approached from two general directions, the peripheral and the central. First, all sources of peripheral irritation must be discovered and removed, whether in the cavities of the head, the gastro-intestinal tract, the prepuce or elsewhere. When this is accomplished attention may be turned to the other or central line of attack. Here we find a more difficult problem. Much depends on the judgment and character of the nurse or mother. The patient must be removed as completely as possible from all sources of emotional excitement, and by line upon line and precept upon precept, must self-control be taught. Yet this teaching must not be of strict disciplinary order, and punishment should not be resorted to. In other words, the child must be taught to control himself without being impressed with the fact that he is afflicted, for such children are often very sensitive, and will utterly refuse to attempt words or actions, if they feel that they may be ridiculed or punished. Active employment must at the same time be provided, and to this end the manual training of our kindergartens and such amusements as require attention and co-ordinated movement, as bicycle riding, may be employed.

A regimen of hygiene must be closely and constantly adhered to. Cool sponge or shower baths in the morning, nutritious diet free from spices and sweets, attention to the bowels and avoidance of over-fatigue are measures which are essential. As adjuvants electricity, particularly the sinusoidal current given in a

bath (when possible), and massage are of some value.

I have said nothing as to medication in this affection as I believe that drugs should be used only to meet incidental indications and as general tonics. The bromides and other sedatives are generally contra-indicated and should be used only when the spasms become violent and prolonged. With the salts of zinc and silver recommended by some I have had no experience.

General conditions such as anæmia should be met on general principles. It is frequently necessary to give something in order to keep the family reminded that the patient is still under treatment. For this purpose, and with the idea of possibly furnishing an added pabulum for the nervous system I have used 5 gr. tablets of phospho-albumen three times a day with apparently some beneficial results.

And finally, as well as firstly and continually, patience and persistence together constitute the *sine qua non* of success. The physician can do little more than lay out a program and give occasional advice and instruction. If the mother or nurse weary of well doing, the result will soon be seen in an exacerbation of the symptoms. The nervous system will become more fixed in its undeveloped state and the patient will be afflicted throughout life. According to the degree of the fundamental degenerative condition will the symptoms be progressive. If, on the contrary, treatment is studiously maintained the reward will be possibly the complete disappearance of the symptoms, at least their amelioration, the result here being to a degree dependent upon the recuperative powers of the system and the extent of its involvement. It is obvious that if



the case can be taken in hand early, before the developmental age is passed, the prognosis is much more hopeful than in those cases which have been unrecognized until the attainment of maturity.

It is in the active portion of life that the symptoms of this condition become most distressing. The degeneration is progressive and frequently but little affected by treatment. Some authorities go so far as to claim that the disease is incurable. This, however, is too radical a statement, as such men as Charcot, Oppenheim and Osler report complete recovery in a few cases and long remission in others. If the condition progresses the sufferer may be afflicted in several ways. The impulse to perform certain movements is frequently irresistible, and though in some cases it may be overcome for a time by the will, the patient suffers intense unrest until the impulse is gratified. The impulse to ejaculate profane and obscene words is occasionally manifested, and no matter where the patient may be must be gratified. Inasmuch as the patient knows what he is doing, although unable to prevent it, the hinderance to earn a living and the accompanying mental distress cause a double suffering. Occasionally the degeneration progresses still further and involves the entire mentality of the sufferer.

General tic is a rare condition, yet so far-reaching are its baneful effects that the possibility of its presence should always be borne in mind when a case of the so-called habit spasms or little tricks of speech or action present themselves in children.

#### DISCUSSION.

**David Inglis**, Detroit: I was very much interested in the paper and I simply want to

emphasize what Dr. Wallin has brought out in regard to the fact that these cases are amenable to treatment if you can get at them early and carry the treatment out.

The greatest difficulty as I see it in cases of this kind is in regard to the matter that the doctor has alluded to; as a matter of fact I think the patient will do better if he can be put away from the relatives, or the father or mother, and on the other hand an irascible father or mother who is continually nagging at the children make it impossible for anything to be done. What the child needs to learn is a steady, quiet and persistent self control; it can not be accomplished by urgent injunctions, it cannot be accomplished by the affectionate mother but it can be by a steady discipline. A great many parents think it is inhuman to take a child away from father and mother and send it to an institution; as a matter of fact some of these cases can be brought to a very satisfactory conclusion if they can be put into a proper school for defective children where the discipline is steady, quiet and persistent, where the child conforms to the general regulations and is made to obey without there being any very great struggle. The difficulty with these schools, of which we have some excellent ones, is that they are rather expensive for the children of poor people and it seems to be rather out of their reach, but the principle is there nevertheless. It is notable, in some of these cases, that the children will behave better and are less subject to their various grimaces, gestures and contortions while they are undergoing the ordinary discipline of a well conducted school than when at home.

Another thing that the doctor alluded to I think needs emphasis, and that is the building up of the child's general bodily vigor. If a child with this sort of a thing developing could be turned loose on a farm and brought up in a hearty, wholesome, vigorous way, leading an outdoor life, eating wholesome food and the least possible attention being called to its grimaces and nervous condition I think more could be accomplished than by any amount of drugs.

**W. J. Herdman**, Ann Arbor: All of these difficulties which involve both the psychic and the physical must be approached, as the essayist has said, in their therapeutics from the two sides, both from the psychical side and the physical side. One can have the very best of conditions, such as have been sug-

gested by Dr. Inglis and yet there may be some little source of peripheral disturbance that has been overlooked and the trouble keeps on in consequence of that.

I arise especially to commend the course of therapeutics that has been suggested by Dr. Wallin, that all sorts of peripheral irritation must be relieved. Then we must not forget we have an over susceptible nervous system to deal with where turb, so that whatever can be done in the way of general tonics, massage and so forth to improve the general stability should not be overlooked but the main treatment after this as has been considered is the psychical treatment, and I strongly support what Dr. Inglis has said in regard to the home atmosphere. It is sometimes the producing cause, and unless they can get away from that suggestiveness and have the mind diverted and have the mental activities educated it is impossible to overcome them even if all the attention has been paid to the physical stages of disability. The child has a lack of inhibitive control, there is not strength enough of will. Often-times that is due to the fact that it has been brought up in this emotional at-

mosphere and has had suggested to it an explosive action. Now if a judicious teacher or a judicious relative would take that child in charge and in a tactful way divert its mind and occupy it with things that leave no such suggestion there is the best condition for a psychic modification of its mentality. In some cases they are accomplishing a great deal in dealing with these things by making use of hypnotic influence in allaying in that physiological way, which is perfectly legitimate, which we as physicians are learning more and more of, and use more and more as we learn more of it, placing the child in such a state that it allays more or less its over sensibility, and then impressing the mentality with something that is directly opposite, thus counteracting the condition by psychical therapeutics.

**W. A. Ferguson, Sturgis:** Owing to the unstable organization of children, it is desirable to give particular attention to their nutrition and so enable them to withstand better the strains of after life. It is the duty of the physician to teach the parents the best methods for establishing and maintaining such nutrition.

## DIFFERENTIAL DIAGNOSIS OF CONDITIONS SIMULATING APPENDICITIS.\*

LOUIS J. HIRSCHMAN,  
Detroit.

Disease of the appendix vermiformis has been so generally and thoroughly discussed and written about in the last decade or so that the mention of anything connected with appendiceal disease might at first glance seem superfluous.

The very fact, however, of this wide dissemination of knowledge of the disease and its manifestations, causing physi-

cians all over the world to be constantly on the lookout for it, has prompted the presentation of a paper of this nature. The prominence given the so-called McBurney's point, as the point of most tenderness, has led, not infrequently, to errors of diagnosis, which have been attended with most unhappy consequences. That tenderness is most exquisite, at this point, in most cases of appendicitis, is unquestionably true; but that it is a constant and pathognomonic sign of the disease is no more axiomatic than that its absence

\*Read before Section on Surgery, Ophthalmology and Otology at annual meeting of the Michigan State Medical Society at Grand Rapids, May 26, 1904, and approved for publication by the Committee on Publication of the Council.

is negatively proof-positive of its non-existence.

Atypical forms of appendicitis have not infrequently been diagnosticated as other diseases, while the reverse is perhaps a more common error. "The unexpected always happens;" and this saying is often exemplified upon the laparotomy table. If, upon opening the abdomen, disease of one organ is found to have been incorrectly diagnosed for another, the error can be corrected at the time, and as the treatment is usually removal of the offender, no harm is done. However, if the diagnostic error is such that it prevents or delays timely operative interference, here is where irreparable damage to the health and welfare of the patient is done, and unnecessarily fatal termination ensues, and the correct diagnosis is first made at the autopsy!

It is, therefore, with a view of assisting in the differentiation of some of the diseased conditions, which call attention to the right side of the abdomen, that this paper is presented to the section. If diseased conditions, generally, would be more considerate, and follow the line of symptoms laid down for them by the textbook, there would be no need for study in differential diagnosis. For, with the textbook in one hand, and the other on the patient's abdomen, any first year student could make an absolute diagnosis.

A great many different diseases have been mistaken for appendicitis, and vice versa, among which may be mentioned: Acute indigestion, intestinal auto-intoxication, lead colic, typhoid fever, malaria, cecal impaction, obstruction of the ileocecal valve, obstipation, renal calculus, gallstone colic, tuberculosis of the peritoneum or cæcum, cancer of the cæcum,

ileus, intussusception, dysmenorrhœa, oophoritis, salpingitis, floating kidney with twisted pedicle, retro-peritoneal abscess, ectopic gestation, acute affections of the pancreas, and many other more unusual conditions.

Of course previous history, sex, age, occupation, habits, etc., will at once exclude a great many of the above, and physical examination will exclude many more. It will be the object of this paper to take up those which are most frequently liable to be confounded with acute appendicitis.

The fact that an attack of acute indigestion often ushers in an attack of appendicitis is too frequently overlooked. Every case which presents the two symptoms of nausea and vomiting accompanied with abdominal pain, no matter how evident the cause of the "indigestion" may seem, should call for abdominal palpation before a diagnosis is made. A purgative dose of castor oil or sodium phosphate, with or without gastric lavage, will soon clear up the indigestion, and determine the diagnosis. Acute intestinal auto-intoxication is accompanied with gaseous distension of the bowel, without a definite point of greatest tenderness. A high enema of magnesium sulphate and turpentine, along with a dose of the purgatives named above will clear the diagnosis in short order.

A condition which might easily be mistaken for appendicitis, on account of the acuteness of its colicky pains, is lead colic. If the patient is a painter or lead worker, a plumber or a worker in colors, it is well to have lead colic in mind. If the patient is a male, between the ages of 30 and 40, and the pain is referred to the region of the umbilicus and is relieved

upon pressure, it is very probably due to lead poisoning. The history of the ingestion of a quantity of canned vegetables or other canned food, renders the diagnosis more probable. If, in addition, the patient complains of cramps in the flexor muscles of the fingers and toes, and a blue line is found on the gums, lead poisoning is the diagnosis. Of course, workers in any of the above occupations may be subject to acute appendicitis, but the symptoms above mentioned should never leave any question as to the trouble.

Typhoid fever, in its early stages, may simulate appendicitis, and a differential diagnosis is difficult to make at first. However, if the patient has been suffering from malaise; has had a slight rise in temperature, higher in the evening; attacks of "pea-soup" diarrhoea; has had attacks of epistaxis, with gurgling and slight tenderness in the right iliac fossa; tenderness over the spleen; a tongue which is coated in the center, with its edges raw, typhoid may be suspected and the patient treated accordingly. There is no muscular rigidity and the point of tenderness is not so acute, and in from 24 to 48 hours the diagnosis will clear itself.

Impacted cæcum gives rise to tenderness, colicky pains in the right inguinal region, and may, at first glance, suggest appendicitis to the medical attendant, but if the patient is elderly and a dyspeptic, with a history of constipation, it is well to have impacted cæcum in mind. Physical examination will show a large, hard, rounded tumor, in the region of the cæcum. The mucous membrane of the cæcum may become scratched and ulcerated by the large fecal mass, and the tenderness may be quite acute. Appendicitis

may arise with the line of symptoms outlined above and diagnosis should not be difficult.

An important, not uncommon condition which, however, is rarely recognized, is stenosis of the ilio-cæcal valve. The histological anatomy of the ilio-cæcal valve shows that it is analogous in structure with the pyloric and rectal valves. A patient suffering from the various symptoms of auto-intoxication who complains of spasmodic pains at or near McBurney's point, with a boggy tumor at this point which disappears and reappears with colicky pains and a gurgling sound, should be examined with the possibility of a diagnosis of ilio-cæcal valve obstruction in mind. Patients with a history of this kind have not infrequently been operated upon for appendicitis and upon recovery from the operation, the symptoms returned and a second laparotomy has disclosed a very much thickened ilio-cæcal valve. The operation of ilio-cæcoplasty, similar to pyloro-plasty, has given prompt and permanent relief. Mayo reported eight cases of this trouble cured by this operation, and Scott, of Cleveland, seven more, the most of which were operated on first for appendicitis and subsequently the real cause of the trouble was discovered and rectified.

Obstipation due to the enlargement of the rectal valves, pressure of a prolapsed or retroverted uterus, or large ovarian cyst upon the large bowel may be the cause of coprostasis and distension of the cæcum with gas and feces; but the relief of the symptoms by thoroughly emptying the bowel and the discovery of the cause by recto-vaginal examination will settle the diagnosis. The four tubular organs located on the right side of the abdomen,



viz., appendix, gall duct, fallopian tube and ureter often by their efforts to rid themselves of obstruction, cause intense and intermittent, spasmodic, colicky, pains, varying more or less in severity; and a differential diagnosis is often difficult at first blush.

Gallstones attack older persons as a rule; the point of acute tenderness is higher up, patients are more or less jaundiced, though not invariably. The pain is of very sudden onset and of excruciating degree and is relieved upon vomiting, if the obstruction is in the common duct. Inspissated bile, distention of the gall bladder in empyæmia, may throw the point of extreme tenderness lower down or near McBurney's point. There is not the characteristic rigidity that there is in appendicitis and you have usually a previous history of similar attacks.

Renal calculus causes intense, sudden pain darting down the ureter into the groin, down into the bladder and sometimes down the thigh or up towards the diaphragm, also usually accompanied by severe backache on the affected side. In the male the testicle usually is retracted. The pain is so intense that the ordinary dose of anodyne has no effect. It is almost impossible to make a physical examination on account of the excruciating nature of the pain. The patient suffers from cold sweats and has an anxious expression and is usually completely prostrated by the intensity of his suffering. A urinary analysis should be obtained as soon as possible. If blood is found in the urine along with the epithelial cells from the ureter or kidneys and accompanied by an excess of acid or the opposite, excess of phosphates and oxalates; the diagnosis of calculus in the ureter or kidney is highly

probable. Floating kidney, with a twisted pedicle will give rise to similar symptoms, and an examination under anæsthesia may be necessary, otherwise often a differential diagnosis cannot be made. Recognition of the tumor, however, will make differentiation easy. If the fallopian tubes are affected, no very pronounced symptoms are manifested for tubal colic is not intense; the pain is more intermittent, the seat of tenderness is more constant and diagnosis is made readily by bimanual examination.

Acute inflammation of the ovaries as well as other disorders of menstruation give rise to crampy pains which call attention to the right side of the abdomen as well as the left, but upon questioning the patient and upon vaginal examination the diagnosis is readily made. It must be remembered, however, that appendicitis may be associated with any one of the conditions above named or to be named, but it is beyond the power of most of us to differentiate between two diseases occurring at the same time, in the same person. Reflex headaches at the top and back of the head and a history of dysmenorrhea or irregular menstruation will also assist in the differentiation.

A condition which by its onset often explains itself, coming on as suddenly as a cloud out of a clear sky, which has been mistaken for acute appendicitis is rupture of an ectopic gestation. This is characterized by sudden abdominal pains, extreme and painful distention, rapid and small pulse, anxious expression, pallor of countenance and every symptom of internal hemorrhage and shock. The abdominal distension may be so considerable as to cause difficulty in breathing and the patient often becomes nauseated and vomits.

The history of one or more lapses of the menstrual period and examination of the breasts should call to mind the possibility of a tubal pregnancy with rupture; and inasmuch as immediate laparotomy is indicated, the question of diagnosis can well be deferred until the abdomen is opened. After one has seen a few patients in the above condition, the matter of diagnosis is very soon settled.

Tuberculosis and cancer of the cæcum are both conditions which very often are not discovered until the abdomen has been opened. The patient may suffer for some time from pain which exceedingly simulates chronic appendicitis; may be cachectic and emaciated and suddenly, through more acute ulceration, acute symptoms resembling acute appendicitis occur. Differentiation in these cases from chronic appendicitis is very difficult, but as the cure is operative interference, an absolute diagnosis is not essential.

Acute suppurative conditions of the pancreas may also simulate acute appendicitis. Occurrence of fatty stools and sugar in the urine, septic temperature, with a tenderness more or less in the region of the umbilicus but without the rigidity of the right recti muscles will serve to call attention elsewhere than to the appendix. Upon opening the abdomen, if white spots, resembling splashes of paint are found on the peritoneal surfaces these are evidence of fat necrosis due to the escape of pancreatic juice into the abdominal cavity, and at once calls attention to the pancreas as being the probable seat of the difficulty.

Abscesses of the kidney, ureters and retro-peritoneal abscesses may simulate appendicitis, but the onset is more gradual and the pain is referred more particularly to the back. Septic temperature and

the absence of rigidity of the recti muscles of the right side, should exclude appendicitis almost at once.

In young children intussusception gives rise to symptoms which very closely parallel appendicitis. Sudden pain, distension, nausea, vomiting, rapid pulse more or less rigidity, will call attention immediately to the right side, where will be found the seat of most tenderness and lead to the discovery of a sausage shaped tumor in the region of the appendix. This will call the attention of the medical attendant to the existence of intussusception. It might be mentioned that absolute constipation in this condition has existed from the first. In adults a train of symptoms which is absolutely identical (with or without the presence of the tumor) makes the question of the presence of ileus or acute intestinal disturbance or obstruction probable. It may or may not be coincidental with an attack of appendicitis.

The method of abdominal examination which has been pursued by the writer for the diagnosis of appendicitis and conditions simulating it, might be interesting to the members of the section. After obtaining the history of the case from the patient or his friends (in case of a female a rectal and vaginal examination is included), the whole of the abdomen is carefully palpated, beginning at the left side and working towards the right, then downward. When the point of most acute tenderness is located, one finger of the left hand is placed over this point. Keeping the left hand in this position, the rest of the abdomen around the tender area is palpated with the right. As tender places are encountered, the patient is asked under which hand the tenderness is most acute, and in this way the definite

point of most acute tenderness is determined. For example: this point is found to be within a radius of two inches of McBurney's point. The finger of the left hand is placed over this point, and if despite palpation with the right the most tenderness still exists under the left hand, it may be assumed with a considerable degree of accuracy that this point is over the seat of the trouble. I have verified the diagnosis of appendicitis made in this

way over and over again; laparotomy showing the appendix to extend in a direction from McBurney's point indicated by the point of most acute tenderness which was located under the left hand. It is a simple method and yet my results have been so satisfactory from following it, that I am convinced that it will be of no little service in differentiating appendicitis from these conditions and symptoms which simulate it.

---

#### DYSMENORRHŒA.\*

JEANNE C. SOLIS,  
Ann Arbor.

Menstruation being a physiological function its performance should be without pain. How far this is from the case every practitioner can witness.

In some investigations made by Englemann in 1900 on this subject among American girls it was found that dysmenorrhœa was present in from 50 to 80 per cent. Among saleswomen who stand all day 91 per cent. are afflicted with dysmenorrhœa and a large percentage are partially incapacitated for work.

The writings of other authors confirm these statements. What such suffering by its frequent repetition through a cycle of from thirty to thirty-five years entails upon the individual in the form of secondary nervous and other disorders makes

dysmenorrhœa and its treatment important subjects.

Etiologically dysmenorrhœa is due to constitutional disturbances exhibiting themselves upon the pelvic organs; or to conditions in these organs themselves.

The constitutional causes may be those of anæmia, of a rheumatic diathesis, or of any debilitated condition. These factors act in producing dysmenorrhœa by causing an irritability of the nerves of the pelvic organs through poor nutrition, and these nerves further irritated by the monthly congestion, respond by pain. The local factors in dysmenorrhœa are as various as the cases themselves.

In some cases we find a lack of development of either the uterus or ovaries, or of both; in others, a narrowing or stenosis of the os uteri—an evidence of lack of general evolution frequently.

Again we find the dysmenorrhœa dependent upon an inflammation of the

---

\*Read before the Section on Obstetrics and Gynecology at the annual meeting of the Michigan State Medical Society at Grand Rapids, May 25, 1904, and approved for publication by the Committee on Publication of the Council.

uterus and adnexa; or there may be a displacement of the uterus present.

Nearly all these local factors act by hindering the free escape of the menstrual discharge from the uterus, thus causing pressure upon the nerves. The diagnosis of dysmenorrhœa itself is comparatively simple. The pain occurring regularly in connection always with menstruation differentiates it from other painful disorders.

The true diagnosis is that of the causative factors, and a local examination is necessary to determine them.

The symptoms are exemplified in the following cases:

Case 1. Miss C. H., aged 36 years. Menstruation was established at about 16 years of age. From the beginning the patient had great pain every month. Had cramps, colic and chills. The flow was always scanty. The pain preceded the flow and continued through first day. On the second day of the period there was no pain at all. At present the patient complains of the occurrence of similar pain every month, which may precede the period for one or even two weeks. She also complains of severe backache. This is present all the time, but is aggravated during menstruation.

Case 2. Miss K. O., aged 20 years. Menstruation was established at 12 years; was normal at first but for one and a half years she has had some disturbance at menstruation. Has pain in the pelvis of a dull aching character, accompanied by a bearing-down feeling. Has headache and a dull ache up the length of the spine during the menstrual periods. Has backache all the time, complains of an excessive leucorrhœal discharge.

Case 3. Miss K. R., aged 34 years. Menstruation was established at 13 years.

It was normal at first. Then at 18 years after a fall and exposure to cold, had severe pain at the periods. Pain has varied in severity, but it has always necessitated the patient's remaining in bed from a few hours to one day every month.

The pain precedes the onset of the flow, sometimes subsiding then, but generally continuing for a day or so. The patient has backache at this time, also, and lately she has been subject to fainting attacks at this time.

The above are more or less typical cases. In case one on examination the uterus was found retroverted, slightly prolapsed, enlarged, freely movable, the vaginal wall and uterine supports as a whole were relaxed.

Case two showed an endometritis. The vaginal canal was hyperæmic and relaxed, the cervix was eroded and inflamed, while the body of the uterus was hyperæmic and enlarged, acutely inflamed, discharging an albuminous secretion.

In case three there was a retroversion of the uterus, but in this case the organ was not tender nor enlarged, and was freely movable.

The treatment of dysmenorrhœa must meet the pathological indications.

Necessarily it will be of both a general and local character, for if primarily there was no constitutional factor, when we see the case some ten or fifteen years after the beginning of the trouble there will be disturbances on the part of the general state of the patient which must be met. The nervous system, digestive, circulatory and eliminating organs must all be overlooked and prescribed for as the case requires.

To meet the local conditions we have in the direct electric current an efficient agent.



Let us take case one. A retroversion of the uterus due to relaxed uterine supports, dysmenorrhœa and backache as symptoms of the same. In the negative pole of the direct electric current we possess a means of stimulating these supports, of improving the circulation which has become impeded, and of so changing the conditions that in a number of months this report was received:

No pain preceding the period in contrast to one or two weeks of pain. The menstrual flow came on without pain and there was no pain at all during the period. Neither was there any backache at all. Previously backache was a constant symptom.

In detail the treatment was as follows: For ten days preceding every period for a number of months the patient received every other day a treatment with the direct current. The negative pole, a round ball vaginal electrode, was introduced well up into the vagina and a current of from 10 to 20 ma. gradually turned on. Then the electrode was moved gently about in order to give the interrupted stimulus of the current to the uterine supports.

As a part of three of the treatments in addition to this vaginal treatment the negative electrode, this time a curved intra-uterine one, was introduced into the uterus with a current of 10 ma.

This electrode was gently slipped back and forth through the cervix, never being entirely withdrawn.

The object in this case was to relieve the circulation of the uterus and to straighten the canal.

The vaginal treatments were ten minutes in duration, the double treatment about fifteen minutes long. The third

month, and thereafter for two months, the patient came for treatment each week preceding the period, and finally, after seven months of treatment of the above short intervals, she was dismissed—a length of treatment very satisfactory to both patient and physician, considering the condition was one of twenty years' standing.

While taking treatments, with the exception of a daily rest for a couple of hours, the patient was up and about enjoying herself.

In the case of metritis the opposite pole, the positive, for the intra-uterine electrode is the choice. Otherwise the treatment is similar. In this case we want to constrict the dilated blood vessels, reduce the blood in the parts, overcome the sensitiveness and prevent the hypersecretion.

Wherever we have inflammation, there we have bacteria. This factor is also met by the direct current. The positive pole in this case will exercise a microbicidal influence in the tissues to which it is applied.

This effect can be heightened by amalgamating the positive electrode with a mercury preparation, or by using a copper or zinc electrode, the electrolytic action of the current causing a disengagement of the various metals in nascent state, and the cataphoretic power of the same carrying these metals deep into the tissues, increasing the range of their action.

Treatment in the cases of metritis should be given at least as often as three every week.

The current strength should be from 10 to 20 ma. and the duration of each treatment from 10 to 15 minutes. The current should never be turned on till both electrodes are fully in position.

The large electrode in most cases is

preferably placed under the patient's hands after it is well covered and moistened, the patient being cautioned as to the removal of rings from her fingers. Then the other electrode is introduced well up in the uterus, the patient lying in the dorsal position. Now the current should be turned on gently till the desired quantity is obtained, and gradually withdrawn in the same manner later. In this way the patient experiences no shock, and any nervous apprehension of the treatment is avoided.

Treatment should be continued in this manner till the inflammation subsides and the dysmenorrhœa no longer is present. The usual internal medication and the use of douches should be advised in connection with the direct current treatment.

Dysmenorrhœa due to constriction of the tubes by adhesions is better treated by the direct current than by any other method.

The only permanently successful treatment of dysmenorrhœa due to stenosis of the cervix is that by means of the direct current.

The method here consists in the use of the negative pole by means of a set of olive-tipped intra-uterine electrodes of varying sizes. The smallest is used first. It is introduced as far as it will enter the cervix, then the current is turned on to a strength of about 10 to 15 ma. and the electrode gently slipped back and forth till the obstruction yields and the electrode enters the constriction.

At the same sitting, or at the next one, depending upon the patient's condition, the second sized electrode is inserted in the same manner, and following this the third one. There is no need for an anæsthetic, there is no hemorrhage, the patient

suffers less pain, at least in duration than at every month, and leaves the office to walk home and to be about her daily duties without interruption.

This treatment may need to be repeated one or two months just preceding the menstrual period. But after that nothing further is required.

Sometimes we find through long continued obstruction to the free escape of the menstrual discharge inflammation or passive congestions have been set up; if so, further treatment with the direct current is indicated either with the positive or the negative pole according to the conditions found.

The general rule to follow is that when we find relaxations, exudates, constrictions, passive congestions, the negative pole with its stimulating, liquefying and dissolvent properties is required. If, on the other hand, we find active hyperæmia, acute inflammations, sensitiveness, erosions, increased secretions, it is the positive pole we must choose for its constricting and sedative actions.

If the stenosis of the cervix is but one evidence of a general lack of evolution on the part of the generative organs, a continued use of the direct current with the negative electrode for about three months is indicated. During the intermenstrual period give intra-uterine treatments three times a week, thus stimulating the nutrition in these parts.

#### DISCUSSION.

**H. H. Cook**, Detroit: I agree with Dr. Solis in regard to the electrical treatment of these conditions because I believe it offers the best results.

Dysmenorrhœa, in a majority of cases, is due to either a displacement of the uterus, or a stenosis of the cervical canal or both, because the displacement, if it be a flexion, may cause a stenosis. Some few cases are due to a lack of development.

The usual plan of treating cases of stenosis has been to give the patient an anæsthetic and produce a rapid dilatation. By this operation you practically tear the tissues, and in the course of six months or a year you get a secondary construction on account of the contraction of the scar tissue which is formed, and the trouble may become even worse than it was, before the dilatation.

When the galvanic current is used in these cases it has a peculiar softening effect and when the stenosis is dilated in this manner the canal becomes soft and patulous and remains open.

If there are any adhesions present they also become softened.

Dilatation of a stenosis by electricity causes no pain, hence there is no necessity of giving an anæsthetic, and the patients can go about their usual vocations without the least discomfort.

There have been various plans of correcting displacements of the uterus by operative measures but the results are not promising. When the round ligaments are shortened for a posterior displacement you do not stimulate the relaxed ligament, but simply stretch a ligament which is already relaxed. By using the electricity the individual fibers of the ligament may be toned up and the ligament placed in a position to exert its own healthy influence in holding the organ in its normal position.

**W. F. Metcalf**, Detroit: I do not wish to have it pass leaving the impression that the application of electricity will cure all cases of dysmenorrhœa. It seems those who at times find operative procedure necessary have kept quiet. I think that one of the most difficult problems that the clinician meets is the treatment of dysmenorrhœa, it being simply a symptom of a variety of conditions. In the majority of cases the patient does not consult her physician until she has suffered long, and although the original cause may have been constitutional or in her environment, yet local conditions have arisen which in many cases demand mechanical correction. I know that the passing of or the dilatation by a charged sound is less painful, and I know that in cases of hyperthesia of the endometrium we may get cures from the use of electricity. But to make a universal application to all cases of dysmenorrhœa would, I think, be hazardous practice.

First we must determine whether there is suppuration in the tubes. One who treats dysmenorrhœa must be so familiar with the pelvic organs that he can determine the exact condition, or as nearly as possible determine the exact condition, before he institutes any local measures of treatment.

The cause in many cases undoubtedly, is lack of development. The blood vessels are engorged. Matrimony helps many of this class. The stimulation of the marital relations is helpful to the development. The bearing of children subsequently will remove naturally that hypersensitive endometrium, a new one will form, and the whole trouble will be overcome. But the discussion of the subject of dysmenorrhœa really means the discussion of all the ailments that affect the human body in women.

**L. J. Hirschman**, Detroit: The discussion of dysmenorrhœa, or the treatment of it, it seems to me is just about as logical as to speak of the treatment of pain, or the treatment of cough, or the treatment of any one symptom. I think too many books are wont to say that dysmenorrhœa is a distinct disease, when it is merely a symptom of a disease of the organism.

Now I don't think that all cases of dysmenorrhœa should be treated by electricity, nor do I think all cases which show dysmenorrhœa as one of the symptoms should be treated surgically. There are a great many young women who present dysmenorrhœa as a symptom of other things than diseased organs which may be a lack of exercise, or wrong environment. A great many cases of dysmenorrhœa as a symptom occur in young school girls, clerks, teachers, stenographers, shop girls, young women who are engaged in some occupation, in which they are confined too much indoors. A great many cases of dysmenorrhœa are due simply to systemic impoverishment; due to not getting enough fresh oxygen. A great many girls who work on sewing machines, operated by foot power have dysmenorrhœa. They sit in a cramped position. Although they may have some stenosis, if they are taken into the country out of the shops, and poorly ventilated school rooms, and made to walk three or four miles a day they will need no electricity or surgical interference. They are a class of cases that have been overlooked to a large extent, those in whom, simple outdoor exercise will do the whole business.

Another point: Dysmenorrhœa we have occurring in young girls just starting to menstruate, and every case, as Dr. Solis suggests, should be examined to see if there is a physical cause. I would say in cases where it is difficult to examine the girl, that a combined rectal and abdominal examination will disclose the condition, without embarrassing her by making a vaginal examination or rupturing the hymen. If we look at young girls in school and find out if they are anemic, and run down we will cure 50 per cent. of the cases without any surgical or electrical treatment whatever, simply by making them take regular out-of-door exercise.

**J. H. Carstens**, Detroit: As has been said, this is a broad subject, but if there is a class of cases that cause a great deal of trouble they are these cases of dysmenorrhœa, and we seem to get them more and more with advancing civilization. It seems to me we have more of them in the large cities than in the country, due to the condition Dr. Hirschman spoke of. Now we very often get dysmenorrhœa outside of diseases of the ovaries or tubes, as mentioned by Dr. Metcalf. A great cause of dysmenorrhœa is a small undeveloped uterus in a young girl, and that small undeveloped uterus is caused by forcing or using up, rather, all the nutrition and energy of the body in the development of the brain by hard study, hard work in school, especially when the girl has not got the mental capacity to quickly grasp ideas. That alone often causes it. They have got to stop this mental forcing and do something else. You have another case where they have that mental capacity, learn easy, go through school just as easy as anything; their menstrual functions are established, they are perfectly well and healthy. They go along—especially school teachers—they go along for ten,

twelve or fifteen years, perfectly well, menstruate regularly, but gradually it becomes more scant, gradually painful, and then they have dysmenorrhœa.

Now you examine this kind of a woman and see what is the trouble, and what do you find? You find they have also an atrophied uterus, a small uterus, a uterus that has not fulfilled its function. That woman ought to have been married and if she had she would never have had any dysmenorrhœa. She has led an abnormal life, that is the reason she has a small uterus.

Now this treatment of Dr. Solis is the correct one. If you haven't used your arm and you allow it to be idle year in and year out, it becomes atrophied, and the only way to get it strong is to use it. The same thing you do by applying electricity; you cause a contraction of those muscles of the uterus, the broad ligament and the round ligament, and gradually bring about a development, an increase in size, stronger circulation, better nutrition and a better organ, and when you have done that your patient won't have dysmenorrhœa. That is a good way to do. Sometimes you can use electricity; I sometimes accomplish the same thing by using a stem pessary, and I leave it in there for six months or a year.

**Jeanne Solis**, Ann Arbor: I will first state that a pus-tube would be a contra-indication, for we know that pus is always a contra-indication, and electricity would not in those cases be the remedy. If we have a case with such a chronic history that none of the usual methods would avail, then we can examine it and find out the condition. In the class of cases I referred to I claim electricity is an efficient agent, not overlooking giving the patient advice as to exercise, dress, diet, etc., but electricity in connection with these ordinary methods is an efficient means in curing dysmenorrhœa.

## THE INTERPRETATION OF RADIOGRAPHS.\*

P. M. HICKEY,

Detroit.

As with all new branches, it is well to pause and consider the limitations, possi-

bilities and proper precautions to be observed in this new art.

\*Read before the Section on Surgery, Ophthalmology and Otology at the annual meeting of the Michigan State Medical Society at Grand Rapids, May 26, 1904, and approved for publication by the Committee on Publication of the Council.

It is safe to assume that radiography is now recognized as one of the important aids in medical and surgical diagnosis. While there may be occasionally met isolated individuals who still fail to recog-



nize the help which may be derived at times from proper radiographic studies, yet the main body of the medical profession recognize radiography as a diagnostic agent whose value is not to be disputed.

We may consider the subject of this paper, viz., the interpretation of radiographs, from two standpoints: First, the technical quality of the radiograph; and second, the experience of the interpreter.

A radiograph may be defined as the record of the density of objects interposed between an energized Crook's tube and the photographic plate. It is important to remember, in considering radiographs, that they are not simple shadow pictures or simple silhouettes, but records of density, the shadings being indicative of atomic weight.

In the radiograph of the hand, which I show you, the bones having greater density than the flesh, offer more obstruction to the passage of the ray; the flesh being of lower specific gravity than the bones, offers still less resistance to the ray; so that in the radiograph of the hand we have a record of the density of the compact bone as distinguished from the cancellous tissue, a differentiation between the bones and the flesh and a differentiation between the finger-nails and the pulp of the finger. It is important to remember that the bulk of the X-rays proceed from a fixed point on the anode, and that they proceed from that point in straight lines, and are not subject to deviation by any procedure that we know of at the present time. With this fact in mind, it is evident that the bodies which are close to the photographic plate will be defined more sharply than bodies at some distance

from the plate. It is also obvious that if the target of the tube is placed too near the plate the rays will be so divergent as to cause distortion. A similar distortion is seen, oftentimes, in kodak pictures, where the nearness of the feet to the camera causes them to assume grotesque proportions. A technically good X-ray negative should possess the greatest possible sharpness in the differentiation of density and should possess the minimum amount of distortion. Contrast in thin parts of the body, such as the hand, arm or foot, is easily secured. When radiographs are made through the denser parts of the body, as the hip, the contrast between the soft tissues and the bones is often slight. This lack of contrast is now recognized to be partially due to a fogging of the plate from the secondary X-rays which are induced in the body, and also from the secondary rays (sometimes called parasitic rays), which are given off from the glass walls of the Crook's tube.

Contrast through the denser parts of the body may be secured by the employment of a tube whose vacuum is sufficiently high to secure proper penetration, and yet not so high as to obliterate the contrast. The effects of the secondary rays can be minimized by the employment of suitable diaphragms, preferably the compression cylinder diaphragm of Schönberg.

Besides the question of contrast, the position of the target of the tube in reference to the part examined is of vital importance. If a fracture of the lower end of the radius, for example, is suspected, the target of the tube should be placed directly above the part to be examined; this point may be accurately determined by a suitable plumb-line. If the target of

the tube is placed considerably to one side, there will result, following the laws of physics, a so-called distorted image.

Having secured a negative possessing the maximum contrast from exposure to a tube properly placed, it should be examined by a suitable light. This may easily be secured by placing the negative upon the upper sash of a window and allowing the light from the sky to shine through, excluding extraneous light; or it can be illuminated by artificial light with a ground glass screen interposed to secure proper diffusion.

The original negative is the proper text to examine. No method of photographic printing will preserve all the detail and the contrast. It is important to remember that in prints from X-ray negatives the question of right and left is reversed. Not long since I was censured by a physician who was examining a photographic print from an X-ray negative for having radiographed the wrong hand, as he did not know that the prints reversed the relations.

The most important topic in connection with the interpretation of radiographs is the experience of the one who makes the interpretation. We are accustomed to demand training on the part of those engaged in diagnostic work with the microscope, the ophthalmoscope and other scientific instruments of precision. It is rare, however, to meet with one who does not feel perfectly competent to make a diagnosis of a radiograph at first glance. In considering radiographs of the joints of children it is most important to have a thorough knowledge of the epiphyses. The radiograph of the elbow, which I show you, is one of the normal elbow at

the age of 15. This appearance of the olecranon, however, has been repeatedly mistaken for a fracture, even by those whose surgical skill is excellent. To avoid mistakes the injured joint should be compared with the corresponding sound joint of the same child.

We must constantly bear in mind, in examining X-ray negatives, that our judgment should be based upon a proper understanding of what we see. This may, perhaps, seem a trite saying, but we should endeavor not to be prejudiced by pre-conceived conclusions. This is one reason why the photographic plate is superior to the fluoroscope. It has aptly been said that while a radiograph will afford us a great deal of knowledge as to the condition of the bones, it will not tell what they *smell* like, and so we should not expect too much information or more than can be afforded by a record of density.

One of the most important teachings which radiography has promulgated is that our old ideas of the healing of fractures should be revolutionized. In considering the interpretation of fractures, we should approach the subject from a strictly modern standpoint and not with ideas of pre-radiographic times. The Roentgen ray has demonstrated that the former exact coaptation which was supposed to be obtained when a fracture was reduced, was and is often only a beautiful idea on the part of the attending medical man; in other words, that perfect reduction of a fracture is rarely secured, and that nature is, indeed, very kind in taking care of our surgical shortcomings. It is obviously improper, therefore, to criticise the setting of a fracture as shown by a

good radiograph, from the standpoint of our old ideas. Criticism of radiographs of fractures should be made only with a full understanding of what radiography has revealed in the healing of these breaks. It is obvious that such knowledge and understanding is not possessed by the laity; and it is, therefore, a great injustice, to ever submit a radiograph of a fracture to a jury of lay minds.

Radiography is coming to be applied as an aid in the diagnosis of thoracic lesions. We have here a field which presents great opportunities for investigation; as much so as was opened up by the stethoscope when Laennec presented it to the profession. Interpretation of radiographs of the chest demands much future study in order that we may utilize the benefit to be derived from this method of physical examination. In the radiograph which I show here of a normal chest we find various shadows which are constantly present in the normal chest. These have been variously interpreted as shadows of the bronchi, shadows of the interlobular pleura, shadows of consolidation. It is the belief of the writer, based upon studies of the injected cadaver, that these tracings represent the course of the larger pulmonary blood vessels.

In considering the future of radiography it is important to remember the possibilities of the stereoscope. Various devices have been employed for giving proper relief and depth in the negatives to be examined. Mr. E. W. Caldwell has recently presented to the radiographic fraternity a very simple stereoscope of which I have here a rather crude model. It is infinitely simpler than the Wheatstone stereoscope which I had the pleasure of

demonstrating to you two years ago. The use of the stereoscope at once removes a criticism which is often seriously advanced that objects are all represented in the same plane. In the image which results from the fusing of carefully prepared stereoscopic negatives, the proper relations and proportions of the various objects represented are preserved. The use of the stereoscope eliminates the question of distortion.

The rapid improvement in the technique of radiography during the past few years causes good hope that similar advancement is destined yet to come. When we consider that we now make radiographs of most of the different parts of the body in a comparatively few seconds where formerly it was a question of as many minutes, we will hope that some time in the future we may be able to take instantaneous radiographs through the thicker parts of the body as is now done through the thinner parts. If this is achieved, we will probably secure a greater wealth of detail in our pictures through the abdominal organs with a corresponding aid in diagnosis of the diseases of the abdominal viscera.

---

#### Catarrhal Pyelitis.—(Conclusions).

1. Pyelitis is of much more frequent occurrence than is generally supposed.
2. It is a frequent cause of prolonged discharge.
3. Local treatment of the pelvis of the kidney is the rational one for this disease and is quite feasible.
4. Beginning nephritis, when due to pyelitis, may be cured permanently by lavage of the renal pelvis.
5. By curing the inflammation in the pelvis of the kidney, nephritis may be guarded against.
6. Catheterization of the ureters is not as difficult as is generally supposed, and it is not accompanied by such dangers as many deem it to be.—(*American Journal of Urology*, October, 1904, WM. FIELD AYRES.)

## The Journal of the Michigan State Medical Society

All communications relative to exchanges, books for review, manuscripts, advertising and subscriptions should be addressed to Editor A. P. Biddle, 57 Fort Street West, Detroit, Mich.

---

Subscription Price, Two Dollars per year, in Advance

---

NOVEMBER, 1904

---

### Editorial

#### IMMUNITY. ITS THEORETIC-SCIENTIFIC SIDE.

In a recent number of one of the Medical weeklies\*, there appears an abstract of an address delivered by Wassermann, of Berlin, before the New York Pathological Society. Some of the points made appear to us as most interesting and highly suggestive.

According to the side chain theory of Ehrlich, specific substances, developed in the serum by immunization, are nothing else than those portions of cells of the living organism for which the substances against which we immunize, possess a specific affinity. "Receptors" are those portions in the organism for which a substance possesses such specific relations. The toxin is first bound to the body cell. Following Weigert's law an overproduction of the "receptors" occurs. The excess of these receptors is cast into the blood stream. Wassermann has been able to demonstrate experimentally three stages: 1. The union of toxin and receptor. 2. The overproduction of receptors. 3. The thrusting off of the superfluous receptors into the blood.

In what way do toxins and anti-toxins unite? Wassermann is evidently a believer in the chemical theory. At first there is only a loose combination between

the two. This gradually and steadily becomes firmer. His experiments along this line are most interesting. They also confirm the work of Meyer and Ransom (reported by Inglis†) that the tetanus poison finds its way to the spinal cord by the nerve path, traveling up the axis cylinders and not through the blood or lymph circulation.

Following Ehrlich's theory, every individual portion of an organism, against which we can immunize, corresponds to a counter group, the receptor of the living organism. The body of certain bacterial species is not a simple homogeneous mass but is composed of several parts. The serum then is made up of the sum of the so-called "partial" elements. In certain species of bacteria, there are races, which from a biological standpoint are differently constituted from other races of the same species. We are therefore compelled to make such sera by means of a large number of cultures of the bacterial species in question, which sera is styled "multipartial" or "polyvalent."

The diphtheria serum now in use acts only on the toxin secreted by the diphtheria bacillus. By a certain method of immunizing animals, a new kind of diphtheria serum has been made, which specifically affects the diphtheria bacillus, or substances present in it. This new diphtheria serum is a "multipartial" serum.

Martin, of the Pasteur Institute, at Paris, and Wassermann, of Berlin, found that the diphtheria bacilli could be made to disappear from the throats of convalescents and healthy children. The "multipartial" serum was dried in vacuo, pul-

---

\*New York Medical Journal, Oct. 1, 1904.

---

†Journal Mich. State Medical Society, July, 1904.



verized and used as a pastille for the throat and insufflated as a powder for the nose. It was found that it caused an agglutination of the great majority of Klebs-Loeffler bacilli which could then be removed by an indifferent fluid. The clinical results so far have been very favorable. If they continue good, "multi-partial" diphtheria serum should be a great aid in the prophylaxis of this disease.

---

### THE RELATION OF VISCERAL DISEASE TO MENTAL PHENOMENA.

It is generally accepted that mental unbalance may accompany cardiac disease or vascular degeneration, the poisoning of kidney disease or the effects of alcohol or other toxic agents, or change in a gland necessary to normal bodily changes. But the study of these visceral changes from the mental standpoint has been insufficient. Some three years ago Henry Head drew attention to mental symptoms seen in diseases of the different viscera which he regarded as distinct.

In a late issue of the Johns Hopkins Hospital Bulletin, Dr. Gamble reports ten cases illustrating this topic; that many cases of mental illness start with different conditions of physical disease. In three cases of mitral stenosis one exhibited hallucination of sight; one alternation depression and exaltation and one suspicion. In one case of asthma there was hallucination of smell and in another unreasoning fear. A case of adherent pericardium there had hallucination of hearing with alternate depression and exaltation. All these could be persuaded that their moods had a physical basis.

In another series of four cases such per-

suasion was impossible. Briefly, a case of arterio-sclerosis had loss of attention and memory, confusion of ideas; a case of bronchial asthma had dreams of a gigantic snake which he was fighting. At first they occurred when half awake and he shook them off when fully awake, but gradually he was never rid of them. A case of aortic regurgitation saw indistinct figures, which gradually assumed definite shapes and he believed they told of the future.

A fourth case of mitral stenosis began with pleasant dreams but they grew disagreeable. She conversed with dead people and believed she had the power of prophesy.

Certainly these facts are suggestive, and doubtless every practitioner can recall cases allied to them. If they shall influence all to carefully observe every case, great light may be cast on the beginnings of mental diseases. Farther we may finally recognize the beginnings of mental disease and stop its progress by relieving the physical disease which is its basis.

---

### ETIOLOGY OF SUMMER DIARRHŒA.

Some time ago the Rockefeller Institute for Medical Research began to investigate the bacteriology of the summer diarrhœas of children. The work has been done in various cities under the supervision of Dr. Simon Flexner. He draws the following conclusions:

(1) *Bacillus dysenteriae* can be isolated from the intestinal discharges and the intestinal mucosa of a large percentage of children suffering from the diarrhœal diseases prevailing along the Atlantic sea-

board of the United States during the summer months.

(2) *Bacillus dysenteriae* is to be sought especially in the mucus thrown off by the intestinal mucosa in these diseases and in the substance of the mucous membrane itself. The bacillus exists in smaller numbers in, or is recovered with far greater difficulty from, the fecal matter that often is admixed with the mucus.

(3) Blood admixture makes the isolation of the bacillus of dysentery from the intestinal discharges more readily accomplished, as it generally indicates infections of severer grade; but the mere presence of blood is of less moment than the occurrence of mucus, since it is in the latter material that the bacillus of dysentery resides.

(4) The number of colonies of *Bacillus dysenteriae* recoverable in cultures is in a general way indicative of the severity of the lesions and symptoms of the disease. Some cases, however, of marked severity yield few colonies, and others of marked mildness a larger number of colonies of the bacillus.

(5) The total number of colonies of *Bacillus dysenteriae* obtainable, is, as a rule, far below the number of colonies of the usual intestinal bacteria which develop upon the plates; but in a very few instances the number of colonies of the dysentery bacillus equals or exceeds that of all other organisms, and in exceptional specimens the bacillus alone appears in the cultures.

(6) The type of *Bacillus dysenteriae* which preponderated in the children is the so-called "Flexner-Harris" organism. The "Shiga" type of the organism is exceptionally met with, and occasionally both types are found in association.

(7) Types of *Bacillus dysenteriae* of less well-established properties have also been encountered. Among these are bacillus "x" of Hiss and Russell and another indistinct type which demands additional study before admission to the group, whose special property is its power to act upon lactose with acid production.

(8) The blood of the children suffering from diarrhoeal disease agglutinates at times the bacillus of dysentery in high dilutions; but this agglutination by the blood does not proceed hand in hand with the occurrence of the bacillus in the intestine. The agglutination reaction is not to be treated as an index of the presence of, or infection with, *Bacillus dysenteriae*.

(9) The close association of *Bacillus dysenteriae* with the intestinal mucosa, and the increased numbers of the organism found under definite pathological conditions, the established pathogenic action of the bacillus for human beings, and the specific blood changes met with in many of the cases of diarrhoeal disease, all speak for a relationship of cause and effect between the bacillus of dysentery and the lesions of the intestine.

(10) It is probable, although it is not proved, that *Bacillus dysenteriae* appears at times among the saprophytic bacteria of the contents of the intestine. The frequency of its isolation in all grades of diarrhoeal disease in children would be in conformity with the view of such a saprophytic existence and the acquisition, under pathological conditions, of pathogenic and invasive properties.

(11) Should it be established that *Bacillus dysenteriae* is occasionally or regularly to be found among the bacteria of the cavity of the intestine, the dangers

of the entrance from without of specially pathogenic examples of the organism are not to be disregarded. The contagiousness of bacillary dysentery among adults and the rarer instances of diarrhoeal contagion among children, prove the necessity of recognizing such an extra-infectious origin of the disease.

(12) Streptococci in large numbers are found frequently associated in cultures with *Bacillus dysenteriae*. Both organisms survive side by side and would seem not mutually to inhibit each other's development. What part is to be ascribed to each in the production of the lesions of the intestine and the symptoms of disease is not established by this investigation. Nor is the possible action of any other of the many bacteria of the discharges excluded by the special findings of the investigation.

(13) The central fact brought out by this collective investigation is the frequent occurrence in the diarrhoeal diseases of children of a specific micro-organism, which hitherto has been held to be of special pathogenic action in human beings, and to be the cause of that form of dysentery among adults and also among children which is characterized by neurotic and pseudomembranous lesions of the intestine and marked infectiousness.

(14) The lesions of the intestines observed in the children who have succumbed to the diarrhoeal diseases treated of in this investigation have been very varied in character; but there has rarely been found among them the particular kinds of pathological changes which characterize pseudomembranous enterocolitis.

## ICTERUS AND SYPHILIS.

There have already been a number of cases reported where icterus recurred during the secondary stage of syphilis. There seems to be no uniformity in opinion among the various writers as to its etiology. The following have been given as causes of the pigmentation:

(1) Enlarged glands which press upon the bile ducts.

(2) Secondary eruptions in the intestine causing an obstruction in the flow of bile.

(3) A general catharrhal condition.

(4) Hyperaemia of the bile capillaries, arising from inflammation of the liver.

(5) Changes in the blood and blood-vessels.

(6) Changes in the nervous system.

The jaundice may accompany the secondary symptoms of syphilis or it may appear alone; it may disappear and reappear again like the eruptions; it lasts from a few days to a few months; and untreated it may become chronic. Occasionally the disease assumes a malignant type with delirium, hemorrhage, coma and death after fifth or sixth day.

Under specific treatment the jaundice will fade away.

---

## THE PASSING OF A VETERAN EDITOR.

On Aug. 6th, the *Medical Record* announced the resignation of its editor Dr. George F. Shrady. Since the founding of that journal, thirty-eight years ago, Dr. Shrady has been its editorial head. Backed by the great medical publishing house of William Wood & Co., he has

made the *Record* the mouthpiece of the great American metropolis. Doubtless neither the firm, its journal or editor have commended themselves to all—but such as desired to keep in touch with New York City and its attaches were compelled to study the *Record*. If they desired to communicate with or favorably influence medical New York, the *Record* presented a valuable medium.

In the ethical, factional, educational, or society conflict the *Record* has always been found on the side which advantaged the interests of the house, primarily and other interests as much as practicable.

Under existing conditions Dr. Shrady pushed his journal to the front and valiantly promoted the interests of the medical profession. It collected news from every portion of the world, and placed it before its readers in a readable manner; it discussed in editorial columns the facts of greatest interest; it gave prominence to the writings of the leaders in medical science; medical discussions and condensations from other publications were duly considered.

As progressive physicians were compelled to keep in touch with the activities of New York, our readers are familiar with Dr. Shrady's record as an editor. Fewer knew him personally as he rarely mingled with the great National Association, or ventured far west of the Atlantic Coast. Personally he was a most delightful personality, true to his friends and all who knew him were such. He won considerable reputation as a surgeon, but his future fame will rest on his record as a medical editor. We cannot recall

one who has continuously served more than a generation in this field—a fact which speaks well for all concerned—and indicates the possibility of an editorial specialty as a career. With one voice the editorial medical fraternity recognizes his editorial ability; the excellence of the three score volumes of the *Record* which he shaped; his genial personality; and extends a hearty wish for many years of enjoyable prosperity.

---

#### DEATH OF DR. HAMILTON E. SMITH.

Dr. Hamilton E. Smith died suddenly, October 8, 1904, at his home in Detroit, of "heart failure."

Dr. Smith was born in Buffalo, N. Y., January 22, 1840. He passed through Victoria College, Toronto, and graduated from the medical department of the University of Buffalo. In 1862, he entered the army as assistant surgeon of the Twenty-seventh Michigan Infantry. The following year he was promoted to the rank of surgeon. He was the first officer mustered in and the last mustered out of his regiment.

After the close of the war, Dr. Smith came to Detroit and has practiced medicine here ever since. He was a member of the Masonic fraternity, Knights of Pythias, the Loyal Legion, Fairbanks Post, G. A. R., the Quarter of a Century Medical Club, Wayne County Medical Society, Michigan State Medical Society and other organizations.

"He was gentle as a child; yet knew no fear; a man of pronounced convictions; truthful to a fault, yet always just."



## County Society News.

The management of the Journal desires to make the department on County Society News of the greatest possible interest to all practitioners in the State. This can only be accomplished through the assistance of the Secretaries of the various County Societies. It is therefore requested of them that, whenever possible, they send an abstract of the papers read before their Society and the discussions aroused by them. If for any reason this abstracting on the part of the County Society Secretary is impossible, it is requested that the papers be sent to the editor's office where they will be abstracted and returned to the writer. Anything which will be of interest to all in the way of items concerning members, resolutions introduced, etc., will gladly be received. It is only by the persistent cooperation on the part of the County Society Secretaries that this department can reach its greatest usefulness.

### WAYNE COUNTY.

The Wayne County Medical Society held its first general meeting since the summer vacation, Sept. 19, 1904. The retiring President, C. G. Jennings, read a very interesting paper upon the work of the past year, dealing with the progress of the Society and its relations with the other and larger medical organizations, of which it is a member. Guy L. Kiefer, the new President, assured the members that he would try to carry out the work of the Society during the coming year to the best of his ability, and that it would be his endeavor to get all the reputable and eligible physicians in Wayne County into the Society. The retiring Treasurer, Guy L. Connor, read a report, showing a real balance of about \$225 in the treasury, as against \$8 of the previous year. After the meeting an informal lunch was given to the members by the retiring President, C. G. Jennings.

WILLIAM J. STAPLETON, JR.,  
Secretary.

## Miscellaneous.

### NEWS ITEMS.

Vienna is to have the largest hospital in Europe—to cover sixty acres—arranged for teaching purposes, to cost \$10,000,000. It will take ten years to construct.

The Montreal General Hospital has decided to allow foreign graduates in medicine, including those from the United States, to occupy positions on its resident staff. Formerly only graduates of institutions in the British dominions were eligible.

At McKinney, Texas, a verdict was returned against the defendant in the \$30,000 suit of Mrs. Hutchins against the St. Louis and Southwestern Railway Company. The husband of the plaintiff was accidentally killed in the railroad yards at Wylie.

With the October issue, *Gaillard's Medical Journal* and *Southern Medicine* will be consolidated and published under the title of *Southern Medicine & Gaillard's Medical Journal*.

Prof. Poffa, of the University of California, reports to the Department of Agriculture, experiments on men engaged in hard manual labor and students working to support themselves while studying, showing that nuts are the cheapest source of energy, and that peanuts are in the front rank. Even nuts are outranked by beans. On fifteen cents daily his subjects were supported on these articles and kept in perfect health. To the nuts and beans he added a limited amount of cottage cheese and eggs and fruit.

The opinion of Judge Frazer, of Detroit, has been supported by the decision of a St. Louis, Mo., judge in that the financial condition of the patient should not be considered in a doctor's charge for professional service, but rather the character of the service, the seriousness of the complaint, the skill and time required and the result. This may be accepted, provided that this total may be reduced so that it may not unduly cripple those of limited means; reduced because of the doctor's willingness to recognize the fitness of his contributing a portion or all his bill to a particular patient. The proper bill is the same to all, but a portion given to some because of their inability to meet it without distress. One may not add to a proper bill because of a patient's wealth, but he may give a portion of a bill to a poor person.

Lorain, O., established a modern filtration plant in 1896. During the five years preced-

ing August, 1893, there had been but fifty-seven cases of typhoid fever. At that date the plant was shut down for repairs and during the next month there were sixty-seven cases of typhoid fever. The plant was then put into operation and the cases have gradually lessened. Clearly the town should have two filtration plants so as to have pure water uninterruptedly.

---

Johns Hopkins Hospital will do systematic work on tuberculosis. A new building is designed to combine treatment of patients with rooms for investigation. Mr. Henry Phipps has contributed twenty thousand dollars to aid the work.

---

The Western Reserve Medical School will establish a tuberculosis dispensary. The houses of the infected will be registered; education of the people in hygiene prescribed; visits to schools made, and instructions of the infected established.

---

It is estimated that three hundred physicians will be needed at Panama to care for the fifty thousand men to be engaged in the work in the canal. There are plenty of doctors for this need, without starting more doctor factories.

---

Governor Pedro Arguelles, of the State of Tamaulipas, has issued an order prohibiting kissing sacred pictures and images in the churches. This order is given to prevent the transmission of contagious diseases.

---

During the past nine years Bellevue Hospital has treated fifty-one thousand drunkards.

---

During much of the past summer the deaths from cholera in Teheran, Persia, numbered several hundred daily.

---

San Francisco is to have a great Medical Library, the gift of the wife of the late Dr. L. C. Lane.

---

A branch of the Walker-Gordon Laboratory has been installed at 126 Miami avenue, Detroit. This makes the second branch in Michigan, the other being at Grand Rapids.

Dr. Flemming Carrow has resigned the chair of Ophthalmology, Otology and Laryngology at the University of Michigan. To fill this vacancy, Dr. W. R. Parker, of Detroit, has been appointed Professor of Diseases of the Eye, and Dr. Canfield, of New York City, Professor of Diseases of Ear, Nose and Throat.

---

Dr. George F. Butler, formerly of Alma, Mich., has removed to Chicago. He has been appointed Professor of Therapeutics in the College of Physicians and Surgeons and Professor of Medicine in Dearborn Medical College.

---

Dr. D. L. Treat is Mayor of Adrian; Dr. V. Sisung, Mayor of Monroe, and Dr. J. D. Riker, Mayor of Pontiac. All are prominent members of their local medical societies.

---

Dr. O. A. Griffin, of Ann Arbor, has returned from Europe, where he has been visiting the various eye and ear clinics.

---

At the meeting of the American Association of Obstetricians and Gynecologists, held at St. Louis, September 15, 1904, H. W. Longyear, of Detroit, was chosen President. The American Academy of Ophthalmology and Otolaryngology elected Eugene Smith, of Detroit, Third Vice-President, at its meeting in Denver, August, 1904.

---

Dr. Herman Knapp, of New York, celebrated the fiftieth anniversary of his graduation at Gussen.

---

American Confederation of Reciprocating Examining and Licensing Medical Boards held a meeting at St. Louis, Mo., October 25, 1904. The following committees reported:

Report of Committee on Uniformity as to Scope and Character of Examinations by State Medical Boards.

Report of Committee on Uniformity of Entrance and Graduation Requirements to be demanded of Medical Colleges.

Report of Committee upon the question of Advanced Standing.

Report of Committee on Uniformity of Forms.

The Detroit Academy of Medicine held its annual meeting October 11, 1904. The following officers were elected: President, Wadsworth Warren; Vice President, P. M. Hickey; Sec'y-Treas., Harrison D. Jenks; Director, Justin E. Emerson.

#### CHANGE IN MEMBERSHIP.

(Sept. 15th to Oct. 15th.)

##### NEW MEMBERS.

Grace Clark—Detroit, Mich.  
J. O. Cobb—Detroit, Mich.  
B. R. Corbus—Detroit, Mich.  
D. A. Dickson—Detroit, Mich.  
B. V. Estabrook—Detroit, Mich.  
E. H. Haywood—Detroit, Mich.  
T. J. Henry—Detroit, Mich.  
R. J. Jamieson—Detroit, Mich.  
C. H. Judd—Detroit, Mich.  
William McEwen—St. Charles, Mich.  
W. F. Morse—Saginaw, Mich.  
C. F. Pequignot—Detroit, Mich.  
H. M. Rich—Detroit, Mich.  
W. J. Seymour—Detroit, Mich.  
C. W. Shotwell—Detroit, Mich.  
V. L. Smith—Detroit, Mich.  
R. C. Stone—Detroit, Mich.  
W. C. Watson—Pontiac, Mich.  
L. L. Zimmer—Detroit, Mich.

##### CHANGE OF ADDRESS.

D. L. Alexander—Sanilac Centre, Mich.  
G. F. Butler—Chicago, Ill.  
F. Carrow—Detroit, Mich.  
R. D. Sleight—Battle Creek, Mich.  
A. G. Snyder—Sea Breeze, N. J.  
W. H. Veenboer—Grand Rapids, Mich.

##### DIED.

Hamilton E. Smith—Detroit, Mich.

#### BOOKS RECEIVED.

A TEXT-BOOK OF CLINICAL DIAGNOSIS. By L. Napoleon Boston, A.M., M.D. W. B. Saunders & Co., Philadelphia, New York, London, 1904.

DISEASES OF THE STOMACH AND INTESTINES. By Boardman Reed, M.D. E. B. Treat & Co., New York City, 1904.

PRACTICAL ELECTRO-THERAPEUTICS. By Franklin B. Gottschalk, M.D., T. Eisele, Chicago, 1904.

## Correspondence.

Secretary:—Will you kindly appoint delegates from your State Medical Association to the Pan-American Medical Congress, which will be held in Panama, Republic of Panama, from the fourth to the seventh of January, 1905?

Yours sincerely,

RAMON GUITERAS, Sec'y & Treas.

Any member of the Michigan State Medical Society desiring to attend these meetings, kindly notify me at once.

A. P. BIDDLE, Sec'y.

#### Haemagglutinins of Bacterial Origin.—

(Conclusions)—The filtered autolyzed products of a number of bacteria possess haemagglutinins of low activity, the formation of which may be stimulated by previously growing the micro-organisms on media containing fresh red blood cells. The injection of these filtrates into dogs and rabbits is followed in some instances by the occurrence of liver necroses with associated fused red blood corpuscle thrombi; like thrombi may occur in other organs. These thrombi are similar in structure to those generally described as hyaline thrombi. The demonstration of agglutination in vitro and the association of the fused red cells with the liver lesions suggest a relation of the agglutinins to the lesions. The relation cannot be considered as proven, for it is possible to exclude the effect of toxins acting directly upon the liver cells. On the other hand the similarity of the lesion to the very definite necroses caused by the powerful agglutinin of cytolytic immune sera strongly supports such a relation.—(*The American Journal of the Medical Sciences*, October, 1904, R. M. PEARCE and C. K. WINNE, JR.)

**Kidney Capsule.**—(Conclusions)—Decapsulation of the kidney in healthy animals may and usually does cause an interstitial nephritis. New blood vessels are formed on such adhesions as occur, these vessels being of but a temporary character, as they are later occluded by the contraction of the cicatricial tissue surrounding them. The ultimate result is a new formed capsule not differing essentially from the original one, except in its tendency to persistent and uneven contraction.—(*The American Journal of the Medical Sciences*, October, 1904, HAVEN EMERSON.)

**Aero-Urethroscope.**—The advantage of Wasserthal's instrument over the ordinary urethroscope are as follows:

1. A larger surface of the mucous membrane can be seen by the observer.
2. An idea of the conformation, elasticity, and resistance of the urethral wall is easily obtained.
3. The compression of air at the end of the tube gives a larger field of vision. Glands, polyps and inflammatory areas appear more distinct.
4. Application of this method has its limits.—(*Annales des Maladies des Organes Genito-Urinaires*, May 1, 1904, WASSERTHAL.)

## Book Notices.

Under the Charge of  
RAY CONNOR.

**RADIOTHERAPY, PHOTOTHERAPY AND HIGH FREQUENCY CURRENTS.** The Medical and Surgical Applications of Radiology in Diagnosis and Treatment. By Charles Warrenne Allen, M.D., Professor of Dermatology in the New York Post-Graduate Medical School. Octavo, 618 pages, 131 engravings and 27 plates. Cloth, \$4.50, *net*. Lea Brothers & Co., Publishers, Philadelphia and New York.

For many years Dr. Charles W. Allen has been known as a fluent but careful writer with the happy faculty of being able to put his thoughts into language readily grasped by the student of medicine. For years he himself has been an earnest student, a teacher and a contributor to medical journalism, especially along the lines of dermatology. The present volume is the achievement of these years of preparatory work. Written in his clear, easy style, it contains the substance of all which pertains to radiotherapy and phototherapy.

Starting in with the history and character of the Roentgen Rays, a careful description is given of the apparatuses and accessories, especially of the tubes; which is followed by details as to the method of administration, modes of procedure, etc.

In general medical diagnosis the thoracic cavity offers the best field of observation; but to the internist and in the field of obstetrics and gynecology the sphere of usefulness is limited. To the surgeon, however, no greater aid to general surgical diagnosis has been given in many years, not only in the location of foreign bodies, calculi, etc., but in the determination of injuries to joints, of diseased bones and other pathological processes.

Under the general considerations of radiotherapy much space is devoted to the treatment not only of the epithelioma (the rodent ulcer, so-called, offering the ideal therapeutic field) but to the inoperable cancer, the sarcoma and to the many diseases of the skin in which this agent has been tried and found useful; recognition being given to its dangers and the best means of protection.

Another part is devoted to Light, a description of the theory, its source, physical properties and action on bacteria. Under phototherapeutics reference is made to the influence of the sunlight, the incandescent, the arc and the blue light baths. Another part is devoted to the physical properties of the sun and arc light, another to radium, and to their therapeutical applications.

Not the least interesting and instructive is the excellent chapter devoted to the "High-frequency Currents," richly illustrated and detailing the history, the method of produc-

tion, the physiological properties and effects and therapeutical applications.

The whole work abounds with illustrations of apparatuses, diagrams and photographs of clinical cases.  
A. P. B.

**TAYLOR ON GENITO-URINARY AND VENEREAL DISEASES AND SYPHILIS.** A Practical Treatise for Students and Practitioners. By Robert W. Taylor, A.M., M.D., Clinical Professor of Genito-Urinary Diseases in the College of Physicians and Surgeons, New York. New (3d) edition. Revised and enlarged. Octavo, 757 pages, with 163 illustrations and 39 plates in colors and monochrome. Cloth, \$5.00; leather, \$6.00; half morocco, \$6.50, *net*. Lea Brothers & Co., Publishers, Philadelphia and New York, 1904.

It seems hardly necessary to add praise to the work of Dr. R. W. Taylor, as it has been known to the medical profession of the world for many years as a practical, compact yet comprehensive, authoritative treatise on the diseases affecting the genito-urinary organs of both sexes (those which are purely gynecological excepted). The new edition, revised and enlarged, brings the history of these important diseases down to date. Not only is gonorrhœa with its numerous and extensive complications considered in all its phases, but the various other affections of the penis, the scrotum, the urethra, the prostate, the testis and appendages, the bladder and the kidney are carefully viewed alike from the medical and the surgical standpoint. Being essentially a clinician, and a clinician of extensive experience, Dr. Taylor's views as to treatment are especially interesting. His methods are always conservative, and he does not hesitate to sound in no uncertain terms a warning against the hasty acceptance of fads in the treatment of these serious diseases, especially exemplified in the treatment of acute gonorrhœal urethritis.

In the consideration of the chancroid Dr. Taylor still clings to his clinical experience that the chancroid is not a specific process and that it is not due to a special specific cause, but that it may arise from many different pyogenic processes, frequently arising *de novo* when the general parts are subjected to irritation and uncleanness, and especially when planted on a syphilitic soil.

More than one-third of the volume is given to the consideration of syphilis, not only as found upon the skin and mucous membranes, the hair, the eye, the nose and the ear, but as exemplified in the more serious affections of the internal organs, the vascular and the nervous systems; with a chapter upon hereditary syphilis.



Like all syphilographers of experience, he strongly emphasizes the statement that the proper time to begin systematic medication in syphilis is the date at which general manifestations show themselves. This chapter on the general methodical treatment of syphilis is excellent.

A. P. B.

**A TEXTBOOK OF MATERIA MEDICA:** Including Laboratory Exercises in the Histologic and Chemic Examinations of Drugs. For Pharmaceutic and Medical Schools, and for Home Study. By Robert A. Hatcher, Ph. G., M.D., and Torald Sollmann, M.D., 12mo., volume of about 400 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Flexible leather, \$2.00, net.

This work was written with the object of popularizing the "Laboratory Method" in the study of organic materia medica. The almost proverbial dryness of this subject can be traced directly to the neglect of objective study. Materia medica can not help but become more interesting when the student leaves the monotonous descriptions of the various text books on this subject and goes directly to the specimens of the drugs and studies them with the aid of the laboratory.

The book is divided into three parts; the first comprises a guide to the study of crude drugs, both official and unofficial; the second deals with plant histology and the third with chemic exercises in materia medica. Throughout the entire work general stress is laid on the recognition of adulterations.

The appendix is excellent and adds much to the value of the book. Like most of the publications of W. B. Saunders & Co., the mechanical work is all that could be desired.

G. L. C.

**TEXT BOOK OF DISEASES OF WOMEN.** By Charles B. Penrose, M.D. Seventh Edition. Octavo. 539 pages, illustrated. Cloth, \$3.75, net. W. B. Saunders & Co., Philadelphia, New York and London, 1904.

When the first edition of Penrose's Diseases of Women appeared in 1897, it immediately became one of the most popular and widely used text books in the medical schools of the country. That this popularity is based on merit is proven by the fact that new editions have rapidly followed, appearing in 1898, 1899, 1900, 1901 and 1902.

It is a work designed primarily for the medical student and in it are to be found the "best teaching of modern gynecology, untrammelled by antiquated theories or methods of treatment." Nearly every page contains sound, practical teaching, clearly and forcefully set forth. As a rule, but one method of treatment is given and when one has finished reading a chapter, one has the author's views clearly in mind. A work prepared in this way is necessarily incomplete, but for students, who are often confused by a multiplicity of methods of treatment and for the busy practitioner who wishes to learn the best and generally accepted method, the book is especially helpful and indeed unsurpassed.

The new (seventh) edition has been thoroughly revised and brought abreast of the times.

The first chapter deals with the etiology of gynecologic affections. The second, in

which the methods of examination are set forth, is particularly well prepared. Chapters V, VI and VII deal with the mechanism of perineal laceration and methods of repair. The primary operation is strongly urged and Emmet's operation is advised.

Succeeding chapters deal with retroversion. Of 211 cases of ventro suspension, followed subsequent to operation, 131 were relieved, 49 improved and 31 unimproved. Twenty-eight became pregnant and 20 of these went to full term.

The tumors of the uterus are quite fully discussed. Regarding cancer of the cervix, the author says: "The hope for better results from the surgical treatment of cancer of the cervix depends, not upon improvement in the surgical technique, but upon the ability of the general practitioner to recognize the disease in its earliest stages, before inaccessible structures have become involved."

Lack of space prohibits emphasis of other good points. The text is well written, and the illustrations are fairly good. Saunders' press-work is always of the best.

B. R. S.

**A HAND-BOOK OF SURGERY.** For Students and Practitioners. By Frederic R. Griffith, M.D., 12 mo. volume of 579 pages, containing 417 illustrations. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Flexible leather, \$2.00, net.

This little work is gotten out as a companion piece to Dr. Stevens' Manual on Medicine, and aims to do for surgery what that valuable little work does for medicine. If one were to make any criticism, it would be that too much is included rather than too little. In addition to the entire field of general surgery, the various branches of special surgery, such as the Eye and Ear, Genito-Urinary Surgery, etc., are covered. A chapter is also given up to Medicolegal Examinations.

It is obvious that in such a broad field, only the merely outline can be given and numerous omissions must occur. The author has had practical points chiefly in mind and at the same time has not forgotten the needs of the student in class room and quiz.

The illustrations are very numerous and for the most part very much to the point. An index closes the volume. The binding and general appearance of the book are similar to Stevens' well known Manual on Medicine, and this makes an attractive and convenient volume. Properly used, it should be of great assistance to the student.

**REGIONAL MINOR SURGERY.** By George Gray Van Schaick, M.D. Second Edition, enlarged and revised, 228 pages, bound in cloth, illustrated. Price \$1.50. International Journal of Surgery Co., N. Y., 1904.

The usefulness of this little book is best shown by the speedy demand for a second edition. The present work contains all the good points of the original and has added to it an article on Foreign Bodies in the Air Passages and Esophagus. The general plan of the work and its sphere of usefulness has not been changed in the present edition.

## Progress of Medical Science.

### MEDICINE.

Under the Charge of

HARRISON D. JENKS.

**Use of Strychnine in Fevers**—In a series of measurements, aggregating over 5,000, taken at frequent intervals on patients with febrile conditions, strychnine was found to have no effect upon the blood pressure. Cabot tried the strychnine by mouth and also subcutaneously; the average amount for the day was  $\frac{1}{8}$  grain. The observations were made with Stanton's modification of the Riva-Rocci instrument. He found the average pressure in those who had the strychnine no more than in the control experiments where none was used. He concludes: "I have been unable to convince myself that strychnine exerts any influence upon the blood pressure of febrile cases when given in the manner and dose mentioned; to me one of the most striking features of the investigation was the fact that the sight of the dinner tray or the prospect of getting up produced a most obvious, though transient, rise in the pressure," while the strychnine had no effect. He does not say that strychnine has no value.—(R. C. CABOT, *Boston Medical and Surgical Journal*, Sept. 29, 1904.)

**Myocardial Disease**—Jackson says this class of disease may arise (1) from disturbance within the heart, as closure of the coronary artery, or (2) general arterio-sclerosis, by far the most common cause; (3) renal disease, especially the interstitial form; (4) no especially etiological factor except hard work; (5) abuse of alcohol. Here the heart is often of great size; perhaps due to the toxæmia; (6) when no etiology can be discovered. Myocardial disease is a more important disease than is usually recognized, and will represent half of all the so-called "heart disease" cases. Hence its importance is as great as the valvular cases. In discussing this paper, Pratt said: "Even in cases of chronic endocarditis the condition of the heart muscle is more important than the valvular lesion, the most frequent cause of broken compensation, according to Krehl, Kelle, and Albrecht, is acute interstitial myocarditis. (*Boston Medical and Surgical Journal*, Sept. 29, 1904. HENRY JACKSON.)

**The Fly in Tuberculosis**—Hayward has made some investigations upon the role that the common house fly, *Musca domestica*, and

the blue bottle fly, *Musca Cæsar*, might have in the spread of tuberculosis. Fourteen flies were used in every experiment. The flies were confined in a cage, fed on milk and allowed to defæcate upon clean cover glasses. No tuberculosis germs were found; then flies fed on tubercular sputum were similarly allowed to defæcate and the bacilli were found. To prevent contamination by the feet and wings, a fine mesh wire screen was put over the sputum, and the flies could feed without getting anything on the feet or wings. Flies fed on the sputum died in 2 or 3 days, though the flies fed on milk lived 8 or 10 days; the sputum apparently caused diarrhœa.

Culture plates made from the fæces incubated for 2 weeks, showed tubercle bacilli on the glycerin agar.

The fæces were rubbed with sterile water and injected into guinea pigs. The pigs developed tuberculosis.

It would, therefore, seem as though the bacilli could be transported through the intestine of the fly unaltered, and that tuberculosis might be transmitted by flies. (E. H. HAYWARD, *New York Medical Journal*, October 1, 1904.)

**Pleural Effusion in Heart Disease**—Steele, in the *Journal of the American Medical Association*, October 1, 1904, gives a careful paper on pleuritic effusions in heart disease, especially in the valvular forms. Effusions from all other causes than simple heart disease were excluded. The right side was affected in 60 per cent. of the cases. Double hydrothorax is rare. The theory that best explains the right side effusion supposes that the enlargement of the right heart, especially of the right auricle, can press on the root of the right lung and obstruct the vena azygos major. An elaborate summary of 31 cases of pleuritic effusion is given, in many of which autopsies were performed, and enlargement of the heart demonstrated. He says: "It seems probable then that the mechanism of the formation of fluid in these cases of pleural effusion in heart disease is not that of a simple transudate, but that congestion of the pleura produces a chronic inflammation of low grade, and that the effusion is both a transudate and an exudate."

## SURGERY.

Under the Charge of

MAX BALLIN.

**Gangrene of the Hollow Viscera**—Gangrene of the Hollow Viscera of the intestines is an affection rarely observed.

Kenerson gives the history of three cases:

1. A man who had been a steady drinker became suddenly ill with intestinal symptoms, nausea, vomiting, diarrhoea and severe pain. Within twenty-four hours the general symptoms became those of a grave intestinal disturbance; temperature 99.5°; pulse 140; face was covered with perspiration; the abdomen was tympanitic, and very sensitive, without showing any localization of pain. The patient was operated upon and on opening the abdomen, serous bloody fluid escaped. The greater part of the small intestine was normal in appearance and feeling; the colon was not involved. There were no adhesions and no localized abscess. A part of the small intestine for a space of about 26 inches was almost in a necrotic condition. The omentum was normal, the mesentery of the necrotic part was swollen, hard and filled with swollen lymph glands. Eighteen inches of the gut, which was practically black, was resected. The patient died six hours after operation.

2. The second case was a man 45 years old. From his previous history, a record of syphilis was obtained. His sickness began slower than in the first case, but with the same abdominal symptoms; great abdominal pain, distention of abdomen, vomiting, diarrhoea. Operation revealed about 16 inches of necrosis of the small intestine. The other findings were as in the first case. No resection was attempted. The patient died the next day after operation.

3. A boy 9 years old was kicked in the abdomen by a playmate. After this, he became sick with intestinal symptoms as in the above cases. At the operation, about 18 inches of the small intestine were found to be very much blackened and necrotic in places. Colon and appendix were intact. The mesentery of the necrotic part was swollen, thickened and hard. After a long period of suffering, the boy recovered.

Kenerson believes that all three of the above cases were caused by a thrombus of the artery of the mesentery. In the first, caused by arteriosclerosis from alcoholism, in the second, by syphilis and the third by traumatism.—(*Annals of Surgery*, Sept., 1904, V. KENERSON.)

**The Surgical Formation of New Collateral Circulation for the Blood of the Portal Vein (Omentopexy).**—S. Talma, who first suggested omentopexy for the cure of ascites in cirrhosis of the liver, comes to the following conclusions. These are the more valuable because of his large experience, gained by observation on the living and at autopsy:

1. Omentopexy often removes the ascites, one of the most troublesome symptoms of cirrhosis of the liver. 2. Talma's operation has no direct influence on the degenerative process of the liver-cells, but may benefit the liver cells by averting the blood from the liver. Cases have been observed where jaundice disappeared after omentopexy. 3. Omentopexy will sometimes cure or prevent hematemesis and the formation of varicose veins in the esophagus, symptoms so frequently met with in cirrhosis of the liver. The newly formed collateral circulation will prevent the over filling of the gastric and esophageal veins. 4. It is improbable that in complete thrombosis of the portal vein omentopexy can procure a sufficient collateral circulation to sustain life. Though Umber has observed a case of a man who died, 47 years old, the autopsy showed complete obliteration of portal and renal veins. The obliteration was of old standing, perhaps even congenital. Sufficient collateral circulation had formed through adhesions between liver, spleen, intestines and abdominal wall.—(*Berliner Klinische Wochenschrift*, 1904, No. 34, S. TALMA.)

**Removal of Gout-deposits and of the Synovial Membrane from the Goutic First Metatarsal-phalangeal Joint.**—Riedel incised the joint in two cases of goutic inflammation of the first metatarsal-phalangeal joint and removed the diseased synovial membrane together with the goutic deposits. In his first case Riedel operated with the idea of finding pus. Being mistaken in this he excised the capsule and cured the patient immediately, from a very painful arthritis. The good result was observed to continue for 14 years. The second operation was also successful. Riedel recommends the operation for only such cases where the goutic affection is isolated in the first metatarsal-phalangeal joint. (*Deutsche Medicinische Wochenschrift*, 1904, No. 35, RIEDEL.)



## GYNECOLOGY AND OBSTETRICS.

Under the Charge of

B. R. SCHENCK.

**Nourishing by the Subcutaneous Injection of Oils.**—Subcutaneous injection of oils and fats has been considerably lauded during the past year, as a partial substitute for stomach and rectal alimentation for emaciated patients, especially before and after abdominal operations. They have been particularly recommended in certain gynecologic cases.

In this connection, recent experiments of Winternitz, in which oils were subcutaneously injected, are of interest. Although fat so administered is absorbed and used in metabolism, all being completely taken up in the course of time, the quantity absorbed within five days after 500 grams are injected, does not exceed 2 grams to 3 grams per day; indeed during the first week, the daily amount is less. Consequently months may elapse before the desired result is obtained and Winternitz concludes that the method is of no practical value. (*Zeit. f. klin. med.* Bd. L. s. 80.)

**The Immediate Repair of the Perineum. Placing of the Sutures Before the Tear Occurs.**—Laphorn Smith emphasizes the importance of closing small tears of the vagina and perineum, in order to lessen the chance of infection taking place through an open wound, small though it be. He advocates the closing of vaginal tears with a running fine chromicized catgut suture. The field of operation is to be kept clean by having constant irrigation going on, or the uterus can be temporarily packed with gauze to keep the blood from trickling over the field of operation.

For 15 years, the author has made a practice of putting a stitch or two in every case in which even half an inch of the fourchet is torn and he feels certain that these patients have made better convalescences than those on whom it has not been done.

In order to obviate the difficulty of securing the divided ends of the levator ani muscle and pelvic fascia, Smith advocates the placing of the sutures before the tear takes place. His technic is as follows:

Just before the child's head comes down upon the perineum, the patient is anesthetized and brought across the bed with the feet held by a twisted sheet or leg holder. The perineum is sterilized and then with the large curved needle firmly held in the right hand, and with the thumb of the left in the anus

and the index finger in the vagina, the needle is entered at the base of the lesser lip on the patient's left and passed rapidly under the vagina and about  $2\frac{1}{2}$  inches above the fourchet, coming out at the corresponding point on the woman's right side. A silkworm gut suture is threaded into the needle, drawn through and the ends caught with an hemostat. A second one is passed in the same way an inch lower down, but taking in the muscles of the perineum. If on account of the rigidity of the perineum, a bad tear is suspected, a third stitch, taking in the ends of the sphincter ani, is placed. Delivery can now go on naturally or artificially, but as soon as the placenta has been delivered, the perineum is inspected under a good light and a stream of water, all clots being rubbed off with the finger; the stitches are tied from above downward, when we will find that there is absolute accurate coaptation of the separated parts.

If by keeping the pains under control and the head well toward the symphysis there has, happily, been no laceration, no harm is done by having introduced the sutures and they are drawn out. If there is a laceration, time and trouble have been saved by having them already in place and the torn surfaces are firmly and properly brought together.

The placing of the perineal sutures before the tear takes place is an instance in which "an ounce of prevention is worth a pound of cure." (*Amer. Med.* July 30, 1904.)

**Intraperitoneal Shortening of the Round Ligaments.**—Menge, of Leipsig, treats retroposition of the uterus by taking up a loop in each round ligament, suturing them together and fastening them to the anterior surface of the uterus. This he has recently brought out as a new operation. (*Cent. f. Gyn.* XXVIII No. 21.)

Kleinwächter, in a scathing article in No. 29 of the same journal, shows that this operation was advocated and fully described 14 years ago, by Palmer Dudley, and says that "a specialist and particularly a university professor should be thoroughly conversant with the literature and history of his specialty. Prof. Menge is proof of the fact that there are exceptions to this rule." It is refreshing to find American workers championed in the German journals.



## PHARMACOLOGY AND THERAPEUTICS

Under the Charge of

W. J. WILSON, JR.

**The Medical Treatment of Deep-Seated Hemorrhage**—It may be stated as not open to question that hemorrhage, whether arterial or capillary, depends essentially upon the existence of a certain blood pressure in the bleeding area and that the indication for medical treatment consists in reducing this localized blood pressure. Such we might hope to achieve: (1) by promoting vaso-constriction of the arterioles supplying the bleeding area; or (2) by promoting fall of blood pressure through widespread vaso dilation in other areas. It is to the first of these methods that attention is commonly directed. In cases where the bleeding area is accessible to local treatment—for example, in certain cases of hæmatemesis—the promotion of localized vaso-constriction—as by ice, adrenalin, etc., may be very successful. But frequently, the area of bleeding is not accessible to local treatment. Then in order to promote localized vaso-constriction we are forced to fall back upon remedies which promote vaso-constriction generally. Until lately ergot was the remedy usually used, but now that far more powerful vaso-constriction adrenalin is coming into general use. As regards ergot, though, I have used it conscientiously for many years, in cases of inoperable deep-seated hemorrhage, yet I could never assure myself that it was of real advantage except, of course, in uterine hemorrhage. But the general, as well as the local, action of adrenalin is undoubtedly capable of checking hemorrhage in some cases. There are, however, at least two serious objections to all remedies which promote general vaso-constriction effectively. On the one hand, unless the general vaso-constriction is adequately compensated by cardiac inhibition, the general blood pressure, including the blood pressure of the bleeding area, will rise rapidly; thus the bleeding might continue or even increase. On the other hand, if the general vaso-constriction is adequately compensated by cardiac inhibition serious symptoms arising from anæmia of the brain

are liable to arise. This danger, I think, is not fully appreciated, although it is known that in epilepsy the administration of supra-renal extract increases the number of attacks.

These considerations led to the employment of the second method by promoting the fall of the general blood pressure through widespread vaso-dilation, and the administration of amyl nitrite was the obvious means of fulfilling this indication. This method, it was argued, would be applicable not only to cases of hemorrhage from some part of the general circulation, but also to pulmonary hemorrhages. For as Schäfer points out, the blood pressure in the pulmonary circulation may be reduced passively by a fall of pressure in the the aortic outflow. (*Lancet*, Aug. 20, 1904. HARE.)

**Treatment of Cancer**—With our present ignorance of the cause and cure of cancer, the first step taken must be in the direction of prophylaxis; when a woman reaches the age of forty, she must be placed in the best possible condition for the resistance to this disease, by local treatment, in case there should be any local inflammation, lacerations, or ulcerations, and secondly, her general health must be looked after, especially as regards diet, exercise, and life in the open air. Should cancer make its appearance, an immediate operation is imperative. If the case when first seen is too far advanced to make operation advisable, or should there be a recurrence of the disease, the X-rays and violet rays offer the greatest hope.

In view of the facts of the great and increasing prevalence of cancer and the inadequacy of the present surgical resources to cope with it, it is to the renewed clinical study of this disease, which has almost been lost sight of, and to experimental serum therapy that our attention must now be directed to seek the cure for this most terrible and fatal of the diseases of the present day. (*Medical Record*, Oct. 1, 1904, A. M. GALBRAITH.)

## DERMATOLOGY AND SYPHILIS.

Under the Charge of

A. B. BIDDLE.

**Etiology and Nature of the Toxic Erythema.**—The writer suggests the following classification of the poisons which give rise to the group of diseases under consideration:

1. Bacterial and protozoal toxins.
2. Ptomaines.
3. Leucomains and other metabolic poisons.
4. Drugs.

The presence of specific toxic substances in the blood in the infectious diseases is well recognized. At least some of the eruptions in scarlet fever, measles, rubella, smallpox, influenza, pneumonia, malaria, gonorrhœa, rheumatic fever, cholera, typhoid fever, etc., are due to *bacterial and protozoal toxins*.

Some of these eruptions are known to be eliminative and to contain the causative agent of the disease. The *causa causans* of smallpox is resident in the variolous pocks; but the prodromal morbilliform, scarlatiform and purpuric rashes are probably produced by the toxins.

From the resemblance of the scarlet fever exanthem and the exanthem of measles to certain drug and serum rashes it would seem probable that the eruption of scarlatina and measles is produced by a toxin and not by a living organism. Morbilliform rashes have been noted in pneumonia; the rashes observed in influenza are usually rubeoloid in character. Various rashes, particularly of the scarlatinoid variety, not infrequently accompany streptococcus infection. Circumscribed pus collections often give rise to recurrent toxic eruptions.

*Ptomaines* or bacterial alkaloids are basic, organic compounds produced by the action of bacteria on nitrogenous matter. This class of poisons, especially the various food poisonings, plays an important rôle in the production of the different dermatoses of the erythema family.

*Mussel poisoning* commonly produces a more or less generalized urticarial rash, accompanied by the most intense itching, due to a ptomain designated mytilotoxin.

*Fish poisoning* may result from ingestion of (1) certain species of fish which are always poisonous; (2) fish which are poisonous during the spawning season; (3) fish affected with epidemic bacterial diseases which render them toxic to man; and (4) fish which are poisonous by reason of having undergone putrefactive changes.

*Meat poisonings* are usually due to the elabora-

tion of certain poisons resulting from putrefactive changes. Sausage poisoning, known as botulismus, gives rise not infrequently to attacks of urticaria. Highly poisonous ptomaines have been found in *milk* (the tyrotoxicon) and in *cheese*, producing urticaria and an exudative erythema. The field of the *vegetable food poisoning* is comparatively unexplored, although the eating of diseased maize and of grains infected with parasitic fungi is known to give rise to severe cutaneous eruptions.

Poisons giving rise to various eruptions may be (1) introduced with foods or may (2) develop in the alimentary canal as the result of the action of intestinal bacteria upon the ingested material. Many eruptions of the erythema family have been attributed to what has been termed *intestinal auto-infection* or *auto-intoxication*.

A *leucomain* is a basic organic compound resulting from metabolic changes in the animal economy, a vegetable substance, closely resembling the vegetable alkaloid. Some of the leucomains are extremely poisonous. In this group are included the large number of retention poisons about which little is known: in diseases of such eliminative organs as the kidneys, intestines and skin, certain products are retained which nature doubtless intended should be thrown off.

That various *drugs* may act as poisons to certain individuals and evoke in them diverse eruption belonging chiefly to the erythema group is well known. The same medicament may give rise to varied eruptions in different persons or even at different times in the same individual.

The rashes appearing after the administration of *diphtheritic antitoxin* are due not to the presence of an antitoxin but to the introduction into the system of an alien or heterogenous blood serum. The injection of plain horse serum into an individual likewise gives rise to these rashes. The exact constituents of the serum which produce the phenomena are not known, but they are doubtless albuminous substances which act as mild poisons; manifestly a non-bacterial clinical substance formed within the animal body. The muscular and joint symptoms due to serum injection are in all probability due to the action of the various toxins and poisons which have a selective influence on these serous membranes. (*Journal of Cutaneous Diseases*, October, 1904, JAY F. SCHAMBERG, M.D.)